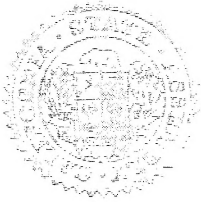


REPORT OF THE
OFFICE OF THE AUDITOR GENERAL

286.1

COSTS AND REVENUES OF
THE MEDI-CAL CLAIMS PROCESSING
SUBCONTRACT

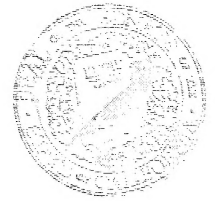
JANUARY 1977



Joint Legislative Audit Committee

OFFICE OF THE AUDITOR GENERAL

California Legislature



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January 28, 1977

The Honorable Speaker of the Assembly
The Honorable President pro Tempore of the Senate
The Honorable Members of the Senate and the
Assembly of the Legislature of California

Members of the Legislature:

Your Joint Legislative Audit Committee respectfully submits the Auditor General's report on the 1969 Medi-Cal claims processing subcontract between the State's contractor, Medi-Cal Intermediary Operations (MIO)—a consortium of Blue Shield of California, Blue Cross of Northern California, and Blue Cross of Southern California—and Electronic Data Systems Corporation (EDS)—a Ross Perot enterprise.

Historically, the "Blues" discovered in 1968 that their contractual assumption of Medi-Cal billings, payment, and reimbursement was foundering due to the limitations of its private medical group insurance system.

The demands of Vietnam had made meager the supply of electronic data processing engineers and technicians. The outlook for continuation of the Medi-Cal program appeared bleak. Enter Ross Perot. In consideration of half the savings, he and his engineers would rescue the Blues, and they did.

Subsequently, in the early 1970s, the market for EDP engineers and technicians normalized, yet the original state contract, terminable upon thirty days' notice, survived. Radical contract changes were achieved through contract "amendments," thus avoiding statutory competitive bid requirements. The previous administration recognized shortly before its departure that the State should insist upon a new contract. The magnitude of the contract, however, requires 12 to 24 months before a contractor is selected. The uncomfortable torch was passed to the present administration.

The audit portion relating to the Ross Perot operation was a joint enterprise of the Governor and the Legislature. It marks the first time that EDS has cooperated with the State of California in permitting access to its books. The way is now clear for the Secretary of Health and Welfare to return this expensive train to its statutory track.

The auditor is Kurt Sjoberg, Audit Manager.

Respectfully submitted,

MIKE CULLEN, Chairman
Joint Legislative Audit Committee

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SUMMARY

The State of California has contracted with a fiscal intermediary to provide for processing and payment of medical billings for services incurred by recipients of public assistance under the Medi-Cal program. Since 1969 the computer processing of Medi-Cal claims has been performed under subcontract to the fiscal intermediary by EDS Federal Corporation of Dallas, Texas.

We reviewed EDS Federal's revenues and costs under this subcontract and made adjustments to eliminate (1) intercompany profits, (2) expenses unrelated to Medi-Cal, such as bad debts and sales and marketing, and (3) allocations of costs which in our opinion distribute a disproportional amount of EDS costs to Medi-Cal (see page 8). Detail discussion of our review is provided in the report (see page 12).

We found no business in the computer industry similar to EDS Federal with which to compare the rate of profits earned on the Medi-Cal project. Rather, the most closely related operations are those of EDS corporate-wide activities (see page 10). During the last three fiscal years, the rate of profit after taxes expressed as a percentage of revenues on Medi-Cal was nearly double the rate on all other EDS activities, including other government health care operations; however, in the first four years of the contract, the Medi-Cal profit rate was equal to or lower than the corporate-wide rate and in one year was one-seventh of what was earned on other business (see page 11).

We also found that the Medi-Cal subcontract had not been monitored by the Department of Health although they are the agency responsible for the administration of the Medi-Cal program (see page 35).

In order to ensure that the most economical, efficient, and effective claims processing system is in use, we recommend that the Department of Health obtain these services either through competitive bidding, negotiated fixed-price plus incentive contract, or some modification of several procedures (see page 34). Future contracts should contain an audit access clause, and periodic audits should be performed (see page 36).

INTRODUCTION

In response to a resolution of the Joint Legislative Audit Committee, we are reviewing various aspects of the operation of the Medicaid program in California (Medi-Cal). This report, the first in a series on Medi-Cal, covers the costs and revenues of the data processing subcontract performed by the EDS Federal Corporation of Dallas, Texas.

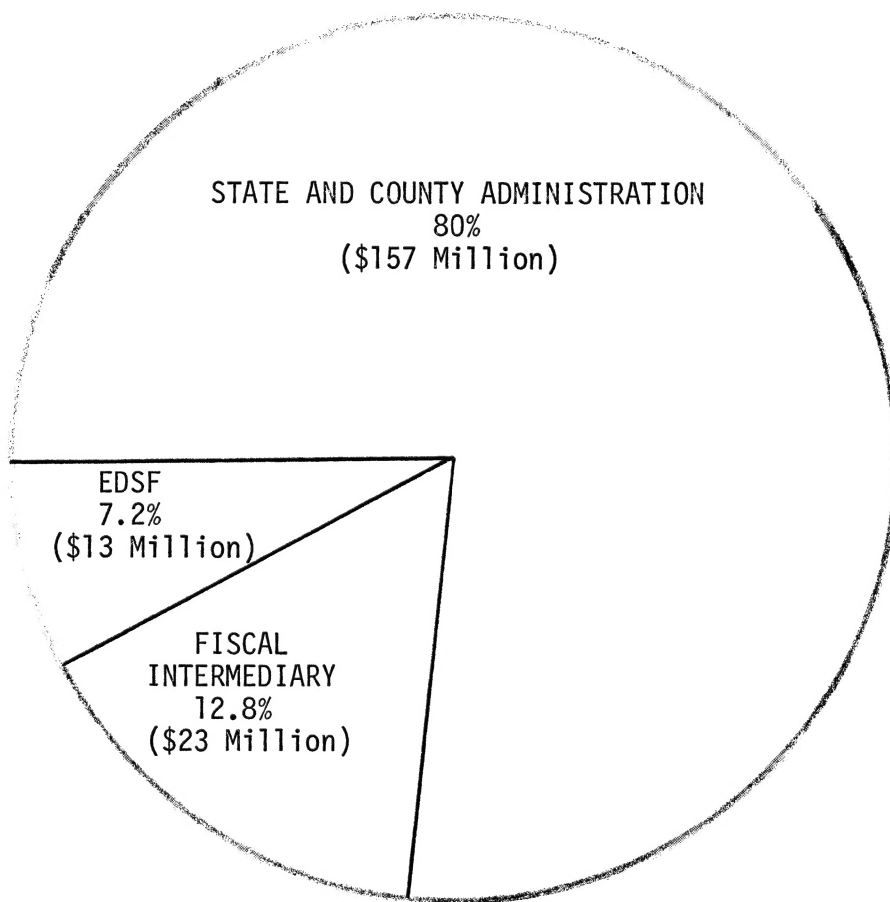
In 1966 the State of California contracted with three fiscal intermediaries to provide processing and payment of medical billings for services incurred by recipients of public assistance and other medically needy persons under the Basic Health Care and Extended Health Services provisions of the Welfare and Institutions Code. These code sections implement the State's operation of the Social Security Administration's Title XIX, Medicaid program. In fiscal year 1976 more than \$2 billion was paid on behalf of Medi-Cal recipients.

The fiscal intermediaries are the California Physician's Service (Blue Shield of California), Hospital Service of California (Blue Cross of Northern California), and Hospital Service of Southern California (Blue Cross of Southern California). In 1972 the three intermediaries became a consortium known as the Medi-Cal Intermediary Operations (MIO). The contract with MIO provides for no-profit no-loss reimbursement by the State of costs incurred by the intermediary. Fiscal year 1976 costs under the contract were \$36.5 million.

In 1969 Blue Shield of California contracted with EDS Federal Corporation (EDSF), a wholly owned subsidiary of Electronic Data Systems Corporation (EDS) of Dallas, Texas, to provide electronic data processing services and supplies. EDSF was to assume total data processing responsibility for the Medi-Cal program with the understanding that: (1) the existing data processing system would be maintained at no additional cost to Blue Shield and (2) a totally new processing system would be installed by January 1, 1972. EDSF revenues under this contract have increased with volume from \$5.8 million in fiscal year 1970 to \$12.9 million in fiscal year 1976. In fiscal year 1976 this represented about 7.2 percent of the budgeted Medi-Cal administrative costs as reflected by the following chart.

MEDI-CAL ADMINISTRATIVE COST COMPONENTS

Budgeted
FY 1976



\$180,000,000
Total

The fiscal intermediary concept in general and the MIO and EDSF contracts in particular have been the subject of previous evaluations, although an audit of this scope on the Medi-Cal subcontract has never been performed.

In 1969 Lockheed Missiles and Space Company completed a study which the State had commissioned to evaluate the Medi-Cal program. It recommended the development and implementation of the Medi-Cal Management System (MMS) which included an eligibility system. In 1970 the State entered into a contract with four private concerns to operate a prototype MMS in two counties and then install the system statewide. Studies by the Legislature's Committee on Efficiency and Cost Control, the Joint Legislative Audit Committee, and the MMS/MIO Blue Ribbon Panel generally concluded that the MMS system was not as effective as the present MIO/EDSF system, and that it would exceed the MIO/EDSF costs by at least \$7 million per year. In 1974 the contract with MIO was continued. In addition, in 1971 Peat, Marwick, Mitchell and Co., an international firm of Certified Public Accountants, performed an evaluation of the EDSF contract with Blue Shield of California and concluded:

The decision to contract with EDS, as documented in our study results, not only was a valid decision as corroborated by performance statistics, it was also the only practical alternative

A number of improvements have also been made to the MIO/EDSF system which have resulted in savings to the State. These savings accumulate by such improvements as a utilization review system,

improvement of some clerical functions, and duplicate claim checking. These benefits have been achieved by MIO/EDSF while reducing the overall administrative cost per claim.

Scope of the Review

The study was commissioned jointly by the Joint Legislative Audit Committee and the Governor of California. The primary work was performed by Arthur Andersen & Co., an international firm of Certified Public Accountants, under contract with the Joint Legislative Audit Committee. All of the work was closely supervised and directed by the Office of the Auditor General. The decision to have Arthur Andersen & Co. perform its work under a joint agreement between the legislative and executive branches was reached when it was determined that each branch was interested in commencing a study of the EDSF subcontract. To avoid a duplication of effort and cost to the State, as well as an unnecessary burden on EDSF (i.e., two teams of auditors), it was agreed that the executive branch would designate one individual to represent it in audit decisions with the Auditor General (planning, scope, methodology) and prepare a separate report to the Governor on the audit results.

Arthur Andersen's Dallas/Fort Worth office was responsible for the review of costs and revenues under the EDSF subcontract and its San Francisco office performed the study of the claims billing procedures and system modifications. The audit approach included discussions with

EDS Corporation's independent auditors, EDS and EDSF officials in Dallas and San Francisco, and a review of the U.S. Department of Health, Education and Welfare's documentation and audit report on certain EDSF contracts for the six months ended February 1976.

Detailed organization charts showing the relationship of various EDS entities to the Medi-Cal project were prepared and the flow of costs to Medi-Cal related thereto. Intercompany markups and general and administrative costs (overhead) were traced to subsidiary cost ledgers, and limited testing and verification was performed on direct costs. The scope of the verification covered costs relating to the Medi-Cal project for the three years ended June 30, 1976.

In addition, summary information regarding the Medi-Cal project's operation during fiscal years 1970 through 1973 was gathered. Similar allocations were made to these years as were made to the latest three years to ensure comparability; however, the 1970-73 information was summarized from EDS records without verification for illustrative purposes. A more detailed discussion on the verification, testing, and methods used in the audit are discussed under the section entitled "Detail of the Verification of Fiscal Year 1974, 1975, and 1976 Activities," page 12 of this report.

Appendix A of this report is a copy of Arthur Andersen's transmittal of its report.

AUDIT RESULTS

EDSF REVENUES AND COSTS UNDER
THE MEDI-CAL SUBCONTRACT

EDSF processed approximately 35.3 million Medi-Cal claims during fiscal year 1976. This processing included data preparation and microfilming of noninstitutional ^{1/} Medi-Cal claims and computer system processing (including machine audits and edits) of all Medi-Cal claims and financial transactions. EDSF reimbursement is affected only by the number of claims processed and not by the cost of this processing. Therefore, under the present subcontract, the impact of the EDSF costs and profits would not change the amount paid for Medi-Cal claims processing.

The EDSF revenues and costs from the Medi-Cal program for fiscal years 1970 to 1976 are summarized on the following page. The schedule shows revenues and costs both as presented in EDSF records and also as we adjusted them based upon the results of our examination. Descriptions of our adjustments are provided in the report as footnoted in the schedule.

^{1/} Noninstitutional claims are from physicians, dentists, pharmacies, etc.

EDSF COSTS AND REVENUES
ON MEDICAL SUBCONTRACT
(FISCAL YEARS 1970 THROUGH 1976)

	Summary (Seven Years Ended FY 1976)		FY 1976		FY 1975		FY 1974		FY 1973 e/		FY 1972 e/		FY 1971 e/		FY 1970 e/	
	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted	Per EDSF	As Adjusted
Revenues:	\$64,152,701	\$64,152,701	\$12,912,710	\$12,912,710	\$10,976,966	\$10,976,966	\$9,783,365	\$9,783,365	\$9,306,594	\$9,306,594	\$7,281,213	\$7,281,213	\$8,006,514	\$8,006,514	\$5,805,339	\$5,805,339
Costs:																
Direct	46,378,163	39,769,043 a/	8,850,994	7,125,124 d/	6,603,814	4,971,894	7,461,665	5,868,731	7,039,054	6,808,487	6,805,287	5,905,137	5,614,483	5,002,381	4,002,866	4,087,289
Indirect	8,830,305	6,238,364 b/	1,926,098	1,052,211	1,544,462	849,582	1,327,636	791,900	1,072,352	834,439	1,079,756	1,102,425	997,439	916,120	882,562	691,687
Total Costs	55,208,468	46,007,407	10,777,092	8,177,335	8,148,276	5,821,476	8,789,301	6,660,631	8,111,406	7,642,926	7,885,043	7,007,562	6,611,922	5,918,501	4,885,428	4,778,976
Gross Income Before Taxes:	8,944,233	18,145,294	2,135,616	4,795,375	2,828,690	5,155,490	994,064	3,122,734	1,275,188	1,743,660	(603,830)	273,651	1,394,592	2,088,013	919,911	1,026,363
Provision for Income Taxes: c/	(4,022,836)	(8,127,145)	(963,164)	(2,135,654)	(1,233,309)	(2,247,794)	(448,323)	(1,408,353)	(568,734)	(777,676)	+ 262,666	(119,038)	(635,934)	(952,134)	(436,038)	(486,496)
Net Income or (Loss):	\$4,921,397	\$10,018,149	\$1,172,454	\$2,599,721	\$1,595,381	\$2,907,696	\$545,741	\$1,714,381	\$706,454	\$965,982	\$ (341,164)	\$ 154,613	\$ 758,658	\$1,135,879	\$ 483,873	\$ 539,867
Percentage of Net Income or (Loss) After Income Taxes (on Revenues):	7.7%	15.6%	9.1%	20.1%	14.5%	26.5%	5.6%	17.5%	7.5%	10.3%	(4.7%)	2.1%	9.5%	14.2%	8.3%	9.3%

Footnotes:

a/ Adjusted for removal of intercompany profits (for detail see pages 24 and 31). This adjustment applies for all seven years.

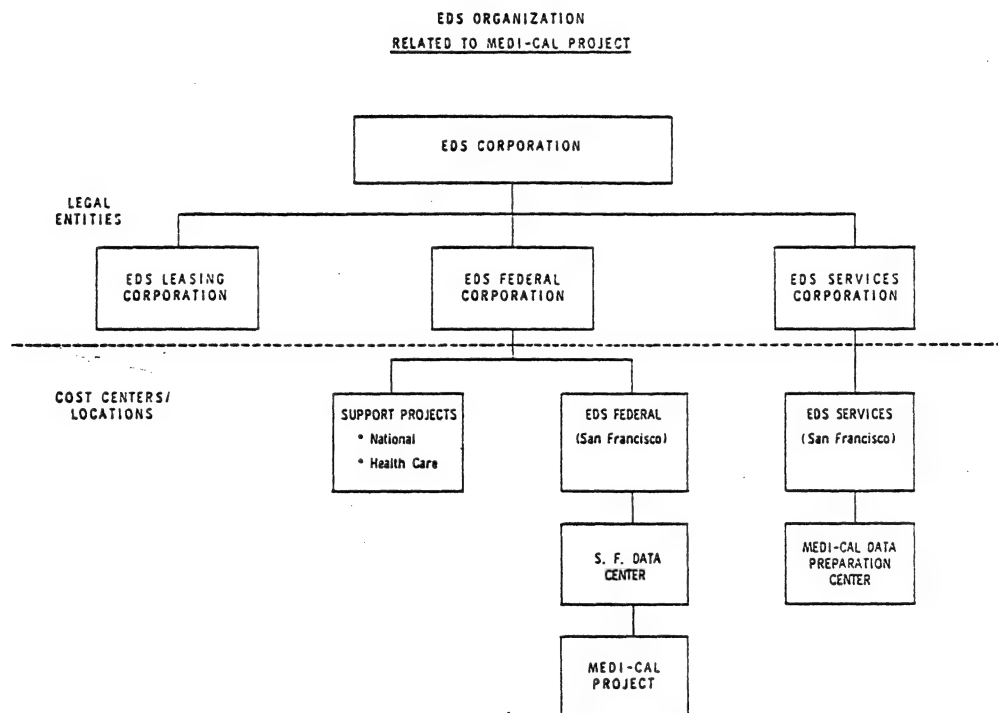
b/ Adjusted for removal of certain general and administrative cost allocations (for detail see page 28). This adjustment applies for all seven years.

c/ The provision for federal income taxes is based on EDS Corporation's effective rate which was 45.1% for 1976, 43.6% for 1975, 45.1% for 1974, 44.6% for 1973, 43.5% for 1972, 45.6% for 1971, and 47.4% for 1970.

d/ An item related to volume adjustments in the allocation of data center costs is included in this figure, which we could not justify nor remove. Further discussion is provided on page 24 of the report. If removed from costs, it would increase profit after tax in fiscal year 1976 by \$255,500, or from 20.1% to about 22%. The impact on prior years would be less.

e/ Unaudited, included for illustration.

The following organization chart summarizes the EDS subsidiaries and related cost centers and locations involved in the Medi-Cal project.



A brief description of how each relates to Medi-Cal follows:

EDS Corporation: The parent organization which wholly owns the EDS subsidiaries. It charges a 10 percent management fee to revenue producing projects, including Medi-Cal.

EDS Federal Corporation: Operates all health care related projects for EDS. EDSF's San Francisco Data Center provides data processing services for the Medi-Cal project.

EDS Services Corporation: Provides data preparation (keypunch) services and supplies to EDS's data centers, including the center which serves Medi-Cal.

EDS Leasing Corporation: Coordinates the lease and purchase of all EDS data center processing equipment and in turn rents the equipment to the various data centers.

EDS Percentage of Profit on
Medi-Cal Compared to Its
Consolidated Corporate Activities

We found no organizations in the computer industry similar to EDS with which to compare the rate of profits earned on the Medi-Cal project. The most closely related operations are those of EDS for its other clients. At the end of fiscal year 1976 EDS had 60 systems contracts in effect with 53 clients. These clients represent a variety of industries, ranging from banking to health care; however, about 22 percent

of its revenue was generated from customers dependent upon government contracts.

The rate of net profit earned on EDS consolidated corporate activities (with Medi-Cal removed) is compared in the following schedule to the rate of net profit earned on the Medi-Cal subcontract.

Comparison of EDS Rates of Profit
on Consolidated Corporate Activities
(With Medi-Cal Removed) and on the
Medi-Cal Subcontract

	Summary	FY 76	FY 75	FY 74	FY 73	FY 72	FY 71	FY 70
EDS Consolidated Rate of Profit After Taxes (Medi-Cal Removed):	12.9%	10.0%	10.8%	13.1%	14.3%	15.2%	14.2%	16.2%
EDS Rate of Profit After Taxes on the Medi-Cal Subcontract: ^{1/}	15.6%	20.1%	26.5%	17.5%	10.3%	2.1%	14.2%	9.3%

^{1/} Profits after adjustments as shown on page 8.

As seen above, the profit rate on the Medi-Cal subcontract has exceeded the consolidated rate of profit both in the last three of seven years and the contract life overall, but was lower or equal to it during the first four years. The differences ranged from more than double the consolidated corporate profit in fiscal year 1975 to only one-seventh the rate in fiscal year 1972.

Detail of the Verification
of Fiscal Year 1974, 1975,
and 1976 Activities

The principal objective of this study was to obtain and verify information on the costs and revenues of providing data processing services to the Medi-Cal project for fiscal years 1974, 1975, and 1976. Various tests, reconstructions, and verification procedures were used. Many of these evaluative efforts are described under the pertinent parts of this section and support the footnotes on the Summary Revenue and Cost Schedule on page 8. When applicable, we eliminated inter- and intracompany markups, reallocated overhead costs and made judgments regarding applicability of certain costs. It should be emphasized that none of the adjustments we made reflect mischarges or overcharges by EDSF under the Medi-Cal subcontract. On the contrary, our tests of the claims billing system (see page 14) revealed no incorrect charges.

The results of other verification procedures are not detailed further because no exceptions were noted. These include a test of the Medi-Cal project payroll and a review of cash receipts and corporate

miscellaneous income. In addition, we performed a limited verification of general and administrative expenses by examining invoices and other documentation for EDSF, the San Francisco Data Center, and EDS Corporate, using various scopes covering the three years on the following accounts:

- EDS Federal--
 - Legal fees
 - Consulting fees
 - Travel and lodging
- San Francisco Data Center--
 - Consulting fees
 - Travel and lodging
 - Apartment rental
 - Relocation cost
- Corporate--
 - Legal fees

No exceptions were noted during this review.

We also considered equipment leasing alternatives which might result in lower costs. Reduced equipment rental costs are usually achieved by obtaining long-term leases from major computer manufacturers or through "third party" lease arrangements. Although reduced rental costs accrue to long-term leases, they may be offset by stringent penalties for early termination. These penalty charges limit the flexibility to adapt to change in technology and to customer changes including contract terminations. A decision to commit to a long-term lease must be weighed against contract and technological inflexibility before a true benefit-to-cost relationship can be developed. The report section on Intercompany Markups further details the cost and revenue flow between EDS Leasing and EDSF (see page 24).

Payments for Data Processing Services

The Medi-Cal subcontract is charged for data processing services primarily based on the number of provider claims or financial transactions processed. Claims vary from simple single transaction physician claims to complex multiple service hospital claims. In order to reflect differences in complexity, all claims and transactions are converted to a standard billing measurement called a Processed Billing Unit (PBU). The number of PBUs assigned to a claim or financial transaction is a function of the number of line entries it has. The claim or transaction is processed through the system to a final disposition status (i.e., check preparation, return to provider, or creation of an account receivable) before a PBU is tabulated. PBUs for institutional ^{1/} and noninstitutional claims are accumulated and priced separately. The rate per PBU varies with volume (see Appendix B for PBU payment schedule); however, in fiscal year 1976 it averaged \$0.29 per PBU.

Since PBU accumulation is the basis for payment to EDSF, we examined the billing process to verify that EDSF only billed Medi-Cal for claims and transactions actually processed and that those claims and transactions were correctly identified as the type defined in the contract between EDSF and the MIO. Specifically, the objectives of the audit were to: (1) test the accuracy of the PBU determination as performed by EDSF, (2) ensure that all PBUs billed are supported by original source documentation, and (3) ensure that final billings are accurately tabulated.

^{1/} Institutional claims are from hospitals, nursing homes, etc.

To accomplish these objectives, we used a scientifically drawn random sample of provider claims and financial transactions for three sample periods, and examined actual bills from EDSF. We also developed a ratio of PBUs to claims processed in our sample periods and compared them to all months in fiscal years 1974 through 1976.

Within the 95 percent confidence level of our sample, we found that processed claims and financial transactions were adequately supported by source documentation and that EDSF accurately tabulates and bills for the number of PBUs it processes. Furthermore, our sample appears to be representative in that the ratio of claims and transactions to PBUs billed from our three test periods are consistent with those of the entire 36 months.

System Modifications

In addition to payments for claims processing, EDSF is also reimbursed for certain, but not all, Medi-Cal system modifications.^{1/} We examined the modifications to the Medi-Cal system which occurred during fiscal years 1974, 1975 and 1976 to: (1) identify all system modifications which either directly or indirectly resulted in an increase in Medi-Cal expenditures to the State of California, (2) review the method of pricing system modifications, and (3) investigate the magnitude and distribution of the workload that resulted from modifications requested by the State.

^{1/} Includes special runs and the development of separate systems.

EDSF's contract stipulates that it will maintain the system and make ordinary day-to-day changes to such programs as may be required as part of the PBU rate without additional charges. Additional modifications have resulted from changes in Medi-Cal regulations, improvements in claims processing methods, an increase in the controls to detect or prevent abuses by providers/beneficiaries, and the addition of management reports. EDS has charged the State for only a limited number of these modifications. These charges have related primarily to the development of the Surveillance Utilization Review subsystem, which has become the property of the State.

EDSF classifies four types of modifications made to the system by its personnel. They are:

Computer Service Requests

- Modifications resulting from directives issued by the State Department of Health or requests from the MIO. EDSF does not charge for these modifications.

Charge Modifications

- Modifications or major system changes for which the State Department of Health agrees to pay.

System Engineer Projects

- Modifications by System Engineers to improve the efficiency of the system (little or no effect on user; no charge by EDSF).
- Programming of computer service requests.

System Problems

- Modifications to correct bugs in the system. No charge by EDSF.

During fiscal years 1974, 1975, and 1976, EDSF made 447 system modifications. The Medi-Cal subcontract has been charged for only 12 of these modifications at a cost of \$385,500. The remaining 435 modifications were noncharge items included by EDSF in the services covered by the PBU charge. Of the 435 modifications, 77 were state-directed, and 358 were MIO-initiated. Thirty-eight of the unbilled modifications required approximately six or more staff-months of EDSF system engineer effort, as well as computer time.

The State does not determine the priority of unbilled modifications or the order in which they are to be implemented. By contract, the priority determination process falls to the MIO. As the workload exceeds personnel capacity, EDSF management must reorganize workloads and shift personnel efforts without direct state input. Consequently, an appreciation of how different modifications relate to the overall Medi-Cal program objectives, and when these modifications could most effectively be integrated with other developing state programs, are important decision-making elements that are missing from the priority-setting process. For example, because the State was not closely involved in what level of effort one of its requests required, a major project was undertaken at no charge by EDSF which the State thought would be minor.

Documentation of modifications for which EDSF charged the Medi-Cal subcontract were recorded as actual EDSF time spent. EDSF quotes a maximum charge for a modification and bills less if less effort is required.

Data Center Allocations

The Medi-Cal subcontract is allocated a monthly charge for processing costs at the San Francisco Data Center. The allocation of these costs is performed largely for internal management reporting purposes since EDSF's current contracts are based on a negotiated fixed price per billing unit and not on any type of cost reimbursement. This charge represents a percentage of the total machine costs, represented by computer equipment rentals and salary and related personnel expenses. An allocation of costs is necessary in that there are multiple users at this data center, each of whom utilizes the available resources in varying amounts. As a general objective, any data center allocation procedure attempts to apportion the costs of the facility to its users based on accurate measures of each user's activity. In the San Francisco Data Center the allocation percentage is developed utilizing detail on monthly computer resource usage for each customer.

In order to assess the reasonableness of the data center allocation, we first gained an understanding of the complex allocation method, tested the logic employed and then applied an alternative allocation for comparison. The results of our alternative allocation test were not significantly different from EDSF's result before any volume adjustment. We have concluded, however, and EDS officials agree, that as the makeup of the data center changes—either through the addition of new customers or a change in an existing customer's workload—the

present allocation method may no longer result in a reasonable allocation to all customers. Following is some detail on this review.

Present Allocation Method

EDSF utilizes a modified version of an IBM system software product called the System Management Function (SMF) to capture the detail on computer resource usage. SMF captures resource usage information for each job, and processing steps within each job, for all projects processed at the data center.

The present allocation procedure uses the resource utilization statistics only for selected types of computer hardware. The statistics used are for the central processing unit (CPU), memory core, and magnetic tape drive units. The resource utilization statistics for disk and printer and for the portion of the CPU required for on-line processing are either not captured or are not used (even though the data is captured) in the allocation procedure. The effect of excluding selected hardware resource usage from the allocation procedure is to place more weighting in the cost allocation on those resources that are included in the allocation. In effect, the Medi-Cal project is charged for disk, printer, and on-line CPU resources based on its usage of CPU, core, and tape.

EDSF refines the SMF resource usage statistics with weighted values intended to recognize the scarcity or cost of each resource. Although weighting is a valid concept, the final charge developed by this allocation procedure is affected by the weighting factors chosen. Although we did not quantify the rationale for the EDSF weighting factors, we did find that they varied from the weighting factors we used in our alternative allocation which were based only on the cost of each resource (see page 23). For example, where EDSF weighted core and CPU by 71 percent of the total adjustment, the cost of these resources would suggest that only 55 percent of the total weighting factor should be applied.

An additional adjustment is made in the allocation procedure for the volume of claims processed for government health care projects. The total percentage of the data center allocated to government health care processing is not increased by the volume adjustment. The volume adjustment does, however, redistribute the government health care percentage of the data center among the following projects:

- Medicare
- Medi-Cal
- CHAMPUS ^{1/}
- Washington State's Medicaid.

^{1/} Civilian Health and Medical Program for the Uniformed Services.

The method of computing the volume adjustment is a series of computations that result in costing claims volume using a standard cost per claim for each government health care project. This process includes factors for volume cost breaks, data center claims processing efficiency, and relative claims complexity. Because of this redistribution, Medi-Cal experienced an average five percent increase in allocated data center costs during fiscal year 1976.

A summary of the volume adjustment rationale provided by EDSF is presented below; a complete EDSF presentation of its rationale is provided as Appendix C.

In summary, EDS has found that a fair allocation of data center costs can be based on two factors: SMF utilization data and input claim volume. SMF utilization data is universally accepted as the basis for cost allocations. However, since SMF does not accurately depict all data center cost considerations, some additional factors must be considered. Our industry experience has proven to us that claim input volume provides the missing factor for complete and equitable cost allocation. The volume factor assures that indirect costs, such as excess capacity for peak use requirements, "dry-up" idle time, and forced reruns affecting other jobs are attributed to the user responsible for their generation.

The requirement to properly allocate these types of costs is recognized and satisfied industry-wide in a variety of ways. EDS feels that its unique solution to this problem results in a fair cost allocation with minimal impact on efficient and cost-effective operations.

The percentage which is determined to be attributable to the Medi-Cal project by the allocation method is applied to the total monthly data center costs—both machine and personnel—and the resulting amount is charged to the Medi-Cal project. The rationale supplied by EDSF for allocating personnel and machines on the same basis was that personnel are required to operate the data center and, as such, are an extension of the hardware utilized. Only certain hardware statistics are accumulated and EDSF feels that these appropriately apportion personnel and related costs to each project.

Based on the allocation procedure described above, the Medi-Cal project has been the largest user of the San Francisco Data Center over the last three fiscal years—approximately 33 percent in fiscal year 1976, down from 37 percent in fiscal year 1974.

Machine and Personnel Cost Reconstruction

In the computer industry, there are numerous methods being utilized to allocate costs of larger computer data centers to the respective users. The allocation of larger centers is a complex problem and there is not a single generally accepted way to allocate costs. We tested the method used by EDSF by reconstructing the costs by a different method, primarily to test the impact of the lack of consideration of the on-line, disk, and printer usage by EDSF as discussed earlier.

Our reconstruction weights the usage of each computer resource to the specific costs of that resource as of June 1976. The CPU resources used were independently resummarized from basic computer resource data (SMF) using a sophisticated computer audit extract system. The result was within 1.2 percent of the EDSF machine allocation before any volume adjustment. The test is limited to June 1976 and may not necessarily be indicative of the results which would have occurred over the full three years. Although the allocation method used in this test is not necessarily a better method, it does measure disk and printer usage and, to a limited extent, on-line usage; whereas, EDSF's method does not.

We also prepared a separate personnel cost allocation for the data center to determine how closely personnel activities paralleled machine usage. Since specific personnel activity measures are not gathered by EDSF, we relied primarily on machine statistics which were more closely related to personnel classifications. For example, printer and data control personnel were allocated based on total print pages for the data center, whereas the tape operation was allocated based on the number of tapes in the library. The result of our test of the June 1976 Medi-Cal allocation was within one percent of the EDSF allocated percentage before the volume adjustment.

The results of our limited tests revealed that, although we questioned some of the steps used in the present allocation method, the only significant difference was caused by EDSF's use of the volume adjustment. During the 12 months of fiscal year 1976 the volume

adjustment to Medi-Cal ranged from a decrease of 1.32 percent to an increase of 6.82 percent and, as previously mentioned, averaged an increase of 5 percent for the year. EDSF officials have stated that the volume adjustment is necessary to properly attribute indirect costs, such as excess capacity, idle time, and forced reruns affecting other jobs. Some computer specialists we spoke with questioned the need for the volume adjustment in addition to the SMF allocation. Since we do not have additional objective criteria with which to assess these different points of view, we cannot conclude that a volume adjustment is or is not needed, nor that the adjustment should be something lower or higher than five percent. We have, however, determined that the impact of the amount in question would increase contract profit after taxes by \$255,500, or from 20.1 percent to about 22 percent. The impact on prior years would be less. (See footnote d, page 8.)

Intercompany Markups

Two wholly owned EDS subsidiaries—EDS Services Corporation and EDS Leasing Corporation—provide goods and services to EDSF for the Medi-Cal subcontract. The organizational relationship of these corporations is illustrated on page 9. These subsidiaries bill EDSF for the goods or service provided. Since the subsidiaries are intended to be profit-making, we traced Medi-Cal billings to the subsidiary's accounting records to determine the markup charged. These are described on the following pages.

EDS Services

EDS Services provides initial data entry (keypunching) for all claims and other documents, microfilming services, and computer supplies such as tapes and disks to EDSF for Medi-Cal and other contracts. The data entry and microfilming services are considered to be separate business activities by EDS. As a result, EDSF and EDS Services negotiate an intercompany rate for these services and that portion of each month's total Medi-Cal contract revenue is recorded by EDSF as a project expense while the EDS Services recognizes that amount as revenue. Billings for supplies are processed in a similar manner.

Expenses for EDS Services' Medi-Cal microfilming and supplies are recorded directly to the appropriate cost centers. Expenses for all of EDS Services' California data preparation activities, the majority being direct salaries of key entry personnel, are recorded in the San Francisco Data Preparation Cost Center. These expenses are allocated monthly to each project's data entry cost center, such as Medi-Cal data preparation, based on the ratio of equivalent document volume.

We summarized the costs of keypunch, microfilming, and supplies provided to the Medi-Cal project and adjusted the direct costs on the Revenue and Cost Schedule to reflect removal of intercompany profit (see page 8). It should be noted that in fiscal years 1970 and 1973 the cost of keypunch services were not fully recovered by the billing charged and that supplies were slightly underrecovered in fiscal year 1972.

EDS Leasing

EDS Leasing, a subsidiary created in fiscal year 1974, coordinates all data processing equipment leasing and purchasing activities nationwide and, in turn, rents or leases the equipment to the various EDS data centers. In addition to the equipment leasing and related activities, EDS Leasing provides certain services in maintaining equipment software (on a no-charge basis) to the data centers and undertakes various research projects.

EDS Leasing leases the equipment under (1) normal month-to-month arrangements, (2) special lease arrangements with vendors, or (3) third-party leases. The data centers, however, are normally billed for the equipment based on the vendors' published price list for a month-to-month rental. The difference in EDS Leasing's cost and the amount charged to the data centers is retained by EDS Leasing to cover its operating and administrative cost.

EDSF's June 30, 1976, computer equipment listing for the San Francisco Data Center was obtained, and we performed the following tests:

- We physically observed over eighty percent of the equipment, including the two computer processing units and other selected items.

- The monthly rental rate on the June 30, 1976, equipment listing was traced to IBM's price list (effective from September 30, 1975, through September 30, 1976) for the five equipment items with the largest monthly rental rates, and for five other items of equipment.
- The total monthly rental cost as reflected on the June 30, 1976, equipment listing was reconciled to the amount recorded in June 1976 by the San Francisco Data Center.

At EDS Leasing, IBM's invoices covering March 1975 and June 1976 rentals were examined to determine that the IBM invoice rental rate agreed with the rental rates in EDSF's equipment listing, and canceled checks for payment of these invoices were examined. We also examined a third-party lease agreement, an IBM special lease agreement, and selected invoices relating to equipment used at the San Francisco Data Center. As a result of this procedure, we noted that one of the San Francisco Data Center CPUs was leased by EDS Leasing from a third-party lessor and the other CPU was leased from IBM under a special "MAC" ^{1/} lease wherein EDS Leasing was not charged for extra shift usage but was charged for maintenance of this CPU. We removed the resulting intercompany markups on the Revenue and Cost Schedule for fiscal years 1974, 1975, and 1976.

^{1/} Monthly Availability Charge.

Overhead Allocations

The Medi-Cal subcontract receives general and administrative (overhead) expense allocations from three EDS sources: a corporate management fee from EDS Corporation and expense allocations from EDSF and the San Francisco Data Center. Overhead costs are generally defined as any management, financial, and other expense incurred which is for the general operation of the business as a whole

We reviewed the composition of the overhead expenses and the logic and methods used in allocating them. In the absence of specific state procurement regulations, we employed federal Cost Accounting Standards Board (CASB) guidelines and Federal Procurement Regulations (FPR) as criteria in this assessment. These regulations establish the reasonable bases for overhead allocation, the method of determining if costs are allowable and a list of some costs which are unallowable in federal procurement.

The allocations of EDSF and San Francisco Data Center overhead expenses are made on a ratio (percentage) of Medi-Cal charges to all project charges at each of these two levels. Since EDSF employs this method consistently and the makeup of the charges to all of its projects are similar, their method appears reasonable. Further, a review of the line-item expenses which comprise the overhead cost pools did not show any expenses which would be considered unallowable under FPR. As

a result of this assessment, we made no adjustments to EDSF and San Francisco Data Center overhead expense allocations to the Medi-Cal subcontract.

The management fee which EDS Corporation passes on to its projects as an expense is presently 10 percent of the revenue generated by that project. Although consistently applied to all revenue generating projects, this method does not assure an accurate allocation of corporate overhead since an allocation based on revenues does not accurately measure the burden of overhead a project should carry related to the investment of corporate resources made on that project's behalf. A cost-basis allocation (a ratio of project costs to total costs incurred) more reasonably accomplishes this objective and is specified in federal procurement by CASB Regulation 410.

In order to determine the difference between the corporate management fee and the portion of EDS Corporation's overhead expense which relates to the Medi-Cal subcontract, we first examined the costs which comprise the corporate overhead pool, applied FPR standards of allowability, and then reallocated the expenses on a cost basis.

The result of the cost-basis allocation showed that Medi-Cal varied as a percent of costs of EDS consolidated corporate activity:

<u>Percent of EDS Corporate Costs Related to the Medi-Cal Subcontract</u>						
<u>FY 76</u>	<u>FY 75</u>	<u>FY 74</u>	<u>FY 73</u>	<u>FY 72</u>	<u>FY 71</u>	<u>FY 70</u>
8.1%	6.3%	7.8%	9.4%	10.6%	10.8%	14.3%

We found two items of expense which were included in the corporate overhead cost pool that are unallowable under FPR. They were bad debt expenses, which are specifically excluded (FPR 15.205-2) and sales and marketing, which are allowable only when they are allocable to government business (FPR 15.205-37). EDS states that because of the nature of their marketing effort many expenses have been charged to sales and marketing which in more traditional companies would have been rightly attributable to operational cost centers or research and development. Some of these are:

- RFP responses—both personnel and materials
- Expenses pursuant to investigations of product improvement—OCR, ^{1/} mark sense, or other claim input media
- Travel expenses for attending meetings with government agencies and industry associations
- Expenses related to attempts to obtain additional business at existing accounts, if this business is outside the scope of current contract.

Although some of these costs may be allowable, EDS officials were unable to isolate them.

^{1/} Optical Character Recognition.

To compute the amount of EDS corporate overhead allocable to the Medi-Cal project using this method, we applied the Medi-Cal percent of costs (see schedule on page 29) to the corporate overhead costs we had reduced by bad debt and sales and marketing expenses. The result is the basis for the adjustments to indirect costs on the Cost and Revenue Schedule.

Professional Support

EDSF maintains a professional support staff at its San Francisco Data Center to serve all its customers. These persons include systems engineers who are billed directly to the various projects and trainee systems engineers who are in EDS's Systems Engineer Development (SED) program. We performed a payroll test of the Medi-Cal project payroll, which included systems engineers, and found no exceptions. We also looked at staffing levels for engineering support personnel (including SEDs) for the three-year period and found no reason for comment.

For the SEDs, EDS charges projects at \$21 per hour, or a maximum of \$3,696 per month (176 hours at \$21 per hour). The \$21 rate includes salary and related expense, training costs, and intracompany markup.

In order to determine the cost related to SEDs assigned to the Medi-Cal project, we summarized total EDS billings to all projects and the training program cost for the three years ended June 30, 1976. The excess of charges, at the standard \$21 rate, over costs was determined. The resulting cost factor was applied to the SED billings to the Medi-Cal project in order to determine the SED costs and related markup for the three years. These adjustments eliminating intracompany markup are reflected in the Revenue and Cost Schedule on page 8.

CONCLUSIONS

The profits earned by EDSF on the Medi-Cal subcontract have varied over the contract period and in summary are higher than what was earned on other corporate activities. Further, recent years have shown profits of greater diversity over those earned corporate-wide which may be reflective of the economies of contract maturity. Since EDSF is under a fixed price contract, rather than cost reimbursement, these results are merely illustrative and do not reflect mischarges or overcharges to the subcontract. In addition, independent assessments by legislative and executive branch committees and task forces have generally concluded that the present MIO/EDS system was more cost-effective than alternative efforts.

The fact remains, however, that a large sole-source subcontract exists, and the State has no assurance that a more economical, yet efficient alternative could be negotiated if it were exposed to competitive bidding. Therefore, the only way that the State can be assured of reasonable costs and profits for the processing of its Medi-Cal system is to employ contracting procedures which provide for competition, as well as an assessment of efficiency and effectiveness. A number of factors revealed about the present contract should be considered. For example, machine and data center allocations have not been based on logic which will not be affected by changes in the center's utilization; and, where personnel are concerned, the allocation basis has not been closely related to their activities. Also, the types of costs allowable and the method of allocating them have not been clearly set forth.

Even under existing contract requirements, increased involvement by state personnel in system modification decisions—perhaps at the data center level—will improve understanding and control of the system.

RECOMMENDATIONS

We recommend that the Department of Health explore a new or renegotiated contract for these services using procurement methods which assure the lowest price consistent with the quality of service required. This may be accomplished through competitive bidding, fixed price plus incentive contracting, or some modification of several procedures.

In the interim, the Department of Health should be more closely involved in decisions relating to system modifications to ensure that state priorities are understood and pursued. This can best be accomplished by having a person on-site who is sufficiently knowledgeable on systems matters to understand the changes required.

BENEFITS

Implementation of these recommendations should ensure that the Medi-Cal claims processing system is the most economical and efficient and that state priorities in systems needs will be met.

DEPARTMENT OF HEALTH HAS
FAILED TO ESTABLISH A SYSTEM TO
MONITOR THE MEDI-CAL SUBCONTRACT

The Department of Health has not monitored the Medi-Cal claims processing contract although they are the department with administrative responsibility over the Medi-Cal program. Until this joint audit, the Department had not examined the costs and revenues of the subcontract with EDSF which has been in effect since 1969.

The effect of the failure to monitor the subcontract has been a lack of information to make decisions regarding the reasonableness of costs incurred and profits made by the subcontractor. This was demonstrated in a joint hearing of the Senate Health and Welfare and Assembly Health committees, which resulted in the request for this audit. Some decisions on the Medi-Cal program could not be made without this important information.

The primary cause of this condition is the lack of a state audit access clause in the Medi-Cal subcontract and the failure to require that one be included if the MIO were to subcontract any of its services. Furthermore, the state contract with the MIO provides that the State shall have prior approval of any MIO subcontracts; however, Department of Health officials could not find a copy of the approval of the EDSF subcontract which should have been given in 1969.

In 1975, federal regulations were amended to allow access of fiscal intermediaries and subcontractors involving Medicaid funds. This provided the State with audit access needed to monitor the subcontract and was the vehicle which initiated this audit. Federal regulations only require contractors to submit to the audit of costs incurred from 1975 forward. EDS, however, opened its records to us for prior periods as well.

CONCLUSION

The Department of Health's failure to monitor the Medi-Cal claims processing contract was due to its failure to require that the subcontract contain an audit access clause. Lack of audit access has been relieved by federal regulations. They should now be able to monitor this subcontract without difficulty.

RECOMMENDATIONS

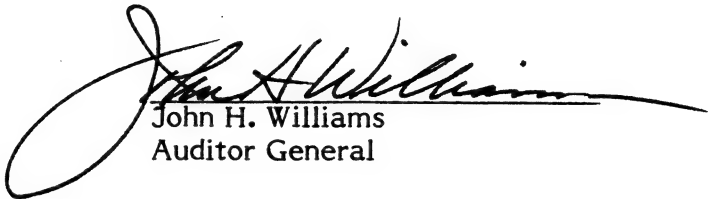
We recommend that the Department of Health:

- Monitor the present subcontract through periodic audits
- Include an audit access clause in any future contracts.

BENEFITS

Implementation of these recommendations will ensure that the State is provided with necessary audit information to administer the Medi-Cal program.

Respectfully submitted,



John H. Williams
Auditor General

Date: January 26, 1977

Staff: Kurt R. Sjoberg

E. D. S. FEDERAL CORPORATION

DALLAS, TEXAS 75230

EDS CENTER
7171 FOREST LANE
(214) 661-6000

January 21, 1977

Mr. John H. Williams
Auditor General
Joint Legislative Audit Committee
925 L Street, Suite 750
Sacramento, California 95814

Dear Mr. Williams:

It has been a pleasure to work closely with the Joint Legislative Audit Committee through the Office of the Auditor General, the Governor's Office through the Department of Benefit Payments, and the firm of Arthur Anderson and Company in the study of EDSF's Medi-Cal Contract. EDSF is relatively new to the government audit process and, as such, we have appreciated the patience and professionalism displayed during this audit. Additionally, we appreciate the opportunity of having these comments and the accompanying enclosure attached to your final report.

The report prepared by the Office of the Auditor General is a very professional and factually presented report which is cognizant of the many facets of contracting. The conclusion of the Auditor General's report depicts fairly and without bias the results from the audit and investigation.

We would like to highlight the following points for consideration.

1. The State of California has an administrative management contract with the Medi-Cal Intermediary Operations (MIO) and MIO in turn has a facilities management contract with EDSF for data processing services. The EDSF contract is a fixed-price contract which has State approval. EDS has utilized the firm fixed-price type of contracting since its beginning. The FPR describes firm fixed-price contracts as shown below.

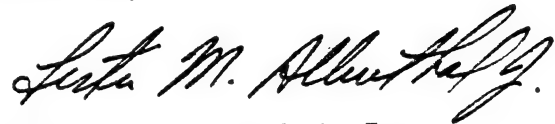
"The firm fixed-price contract provides for a price which is not subject to any adjustment by reason of the cost experience of the contractor in the performance of the contract. This type of contract, when appropriately applied as set forth in this §1-3.404-2, places maximum risk upon the contractor. Because the contractor assumes full responsibility in the form of profits or losses, for all costs under or over the firm fixed-price, he has a maximum profit incentive for effective cost control and contract performance. Use of the firm fixed-price contract imposes a minimum administrative burden on the contracting parties."

2. The question of poor contractor performance has never been questioned but in fact, as evidenced by both the Auditor General and Department of Benefit Payments audit reports, the contractor's (MIO/EDSF) performance has been cited as consistently excellent. This position is further supported by reports from the Legislature's Committee on Efficiency and Cost Control, the Joint Legislative Audit Committee, and the MMS/MIO Blue Ribbon Panel.
3. In open competition it has been proven that the MIO/EDSF system is at least \$7 million per year cheaper.
4. As you have stated in your report, MIO/EDSF has effectively incorporated improvements in the system which have saved the State benefit dollars and at the same time reduced administrative expenses.
5. We accepted the contract at existing costs, fixed the price, incurred and endured substantial risk, delivered a high quality product which meets or surpasses the requirements of our contract and in the process incorporated efficiencies to make a fair and reasonable profit. We feel that our profit margin when compared to other subcontracts to the State of California is reasonable and acceptable. We have consistently taken exception to being singled out for audit when all other costs of the State and the Medi-Cal program continue to escalate.

Should the State determine the necessity to change the present contractual arrangement, we would concur that the appropriate and fair procedure for the State to follow to assure a competitive price is to periodically submit the Medi-Cal program out for bid with restrictions on quality and performance to assure equal to or superior performance than they are currently receiving.

Again, we would like to express our appreciation for the professional manner in which this audit was conducted.

Sincerely,

A handwritten signature in cursive script, reading "Lester M. Alberthal, Jr.".

Lester M. Alberthal, Jr.
Vice President

LMA, Jr/sl

RESPONSE TO REPORT OF
THE OFFICE OF THE AUDITOR GENERAL
TO THE
JOINT LEGISLATIVE AUDIT COMMITTEE

The following comments pertain to the audit approach utilized in reviewing EDSF affiliated companies:

Profits should be considered as applicable to the functions of service performed under the Medi-Cal contract.

While EDSF does not dispute the accuracy of profit percentages of revenue on the Medi-Cal contract, as shown within this report, we feel that other facts need to be evaluated to properly assess these figures.

EDSF contracted with CPS in 1969 to provide all 'Data Processing' services at a price which 'fixed' CPS's cost per claim at the 1969 level. Included in the scope of 'Data Processing' were several very diverse functions. The major functions were:

- * Data Processing - Designing, programming, and operating of computer systems
- * Data Preparation (Data Entry) - Key punching or keytaping of all required data
- * Microfilm Services - Supplying and processing of microfilm

- * Computer Supplies - Purchasing and maintaining supplies of requested forms, tapes, and disks.

At the time EDSF entered into this contract, CPS was performing the Data Processing function totally within the CPS organization. Some or all of the other functions were being purchased from outside sources.

EDSF's function is to manage and operate computer centers and to design and implement business systems. At the time of the CPS contract, EDSF had no experience in the other areas included under the contract. The alternatives were to contract with outside vendors or to attempt to perform unfamiliar functions in extremely critical areas.

EDS (EDSF's Parent Company) decided that these functions were too critical to the overall performance of the contract to entrust to vendors completely outside corporate control and therefore decided to provide the capital to establish EDS Service Corporation. EDSS is a wholly-owned subsidiary of EDS, and an affiliate of EDSF.

EDSS developed or acquired personnel with the expertise to perform the non-computer functions under the CPS contract and to market these services commercially. EDSS is now one of the largest vendors of these services in the world.

With all of the above facts considered, EDSF strongly takes the following position.

- * EDSS provides services to EDSF that are uniquely different from the primary function of EDSF's business.
- * These services are provided at a cost which is competitive with that which could be secured from other vendors, and the quality of service provided is much greater.
- * EDSS is entitled to a reasonable profit for services provided, as would be any other vendor or supplier of these services.

A further breakdown of the profit percentages shown by this report are shown below.

EDS RATES OF PROFIT BY SERVICE

	Contract Summary	FY 76	FY 75	FY 74	FY 73	FY 72	FY 71	FY 70
Data Processing and Contract Management	12.1%	14.5%	19.8%	13.3%	12.2%	(2.8%)	10.6%	10.3%
Data Preparation, Microfilm Service, Supplies	9.8%	18.0%	22.1%	14.4%	(6.0%)	10.0%	7.7%	(2.2%)
Total EDS Profit Per Report	15.6%	20.1%	26.5%	17.5%	10.2%	2.1%	14.2%	9.3%

The Auditor General has calculated the rate of profit earned by EDS on all contracts, other than Medi-Cal, during the same period to be 12.9%.

Electronic Data Systems Federal Corporation (EDSF) first entered into a contract with California Physicians Service (CPS) in the spring of 1969 for purposes of providing data processing services for the Medicare Part B program. Within a very short time, EDSF had demonstrated that it could deliver on its contractual promise of providing cost-effective data processing systems which yielded a high degree of program control. As a result of this endeavor, CPS contracted with EDSF for the balance of its data processing requirements in September 1969. This contract called for EDSF to maintain current systems in support of CPS commercial business, the CHAMPUS program and the Medi-Cal program and assume the capital investment and associated risk with the development and implementation of new systems.

Up to this time, CPS was applying ever expanding resources, through subcontracting and the development of in-house capabilities, to resolve both cost and operational problems surrounding the Medi-Cal program. Administrative costs were rapidly escalating. Existing systems did not provide adequate control of payments and the level of service to the provider and beneficiary populations was seriously deficient due to large backlogs of unprocessed claims. Serious and legitimate complaints were being received from providers to the degree that the Medi-Cal program was in jeopardy. The situation had deteriorated to the point that the State had awarded a contract to Lockheed Corporation calling for the design of a new Statewide Medi-Cal Management System (MMS), underwritten by public funds.

This was the background that prompted CPS to negotiate a contract with EDSF to provide the data processing services for Medi-Cal. Upon award of this contract, EDSF immediately undertook to substantially improve the existing system, followed by the development of a new, upgraded system, to assure that CPS could properly and cost-effectively administer the Medi-Cal program. The system upgrade and development efforts were totally underwritten by EDSF despite the high risk of being on a month to month contractual basis. This was contrary to the MMS parallel effort — which resulted in a \$12 to \$19 million development capital expenditure by the State of California.¹ Since 1969, EDSF has continued to provide the most

1 See Footnotes Page 8

advanced and sophisticated Medicaid claims processing system available. During this time, EDSF's relationship with CPS, MIO and the State of California has resulted in the following accomplishments:

- Benefit dollar savings to the Medi-Cal program have exceeded \$1.5 billion, while provider participation and satisfaction have increased.
- In recent years, the California Consumer Price Index has risen over 36%, while the administrative cost per claim has dropped 19%.
- Total administrative costs have increased 182% from \$60 million to \$170 million, yet the fiscal intermediary portion, as a percent of total, decreased 52%.²
- The EDSF charge, as a percentage of total administrative costs, has dropped from 13% to less than 8%.

The above accomplishments were achieved while processing over 224 million claims resulting in \$7 billion in benefit payments to providers.

EDSF MEDI-CAL SYSTEM EVOLUTION

The EDSF Medi-Cal system has evolved from the takeover of the existing system in 1969 and its enhancement, through the upgrade system, to the current MIO system. The 1975 EDSF MIO system certification to meet MMIS specifications for ongoing 75% Federal Financial Participation (FFP) made California the first of the high Medicaid volume states to achieve this financially important milestone.

With the assumption of the CPS Medi-Cal data processing in September 1969, EDSF immediately proceeded to determine the system enhancements that would be required to reduce the 2.5 million claim backlog and the high percentage of aged claims in inventory. Immediate objectives were: to automate as many manual functions as possible; to maintain adequate historical records of all claims processed; to automate the reporting of all claim dispositions; and to improve the

2 See Footnotes Page 8

validity of all claim information used within the system. The implementation of these system enhancements resulted in the following improvements in performance:

- An immediate increase in monthly claims production which achieved a significant reduction in claim backlog and immediate administrative dollar savings.
- Provider inquiries were answered much faster due to the installation of a comprehensive control and management reporting system.
- Automated claim duplicate checking resulted in a benefit dollar savings of over \$7 million in 1970 alone, the first year of operation.

Concurrent with this effort, EDSF commenced the design of an all new system incorporating enhancements and new operational techniques. The installation of this system was to be affected by January 1972 by contractual agreement with CPS. The systems design, acceptance, programming and testing was accomplished at EDSF expense in less than one year — four months ahead of schedule. The most significant features incorporated into the upgrade system were:

- The first prior to payment Medicaid utilization review system in existence. This and other system cost containment features achieved over \$69 million in benefit savings in 1972 alone, the first year of operation.
- An on-line cathode ray tube (CRT) network connecting regional processing sites to the main processing center.
- A new financial system allowing for automated accounts receivable, summarized explanation of benefits (EOB) to providers and generation of provider earnings data for Internal Revenue Service.
- The total automation of many manual clerical functions.

Just as the upgrade system was designed and implemented concurrently with the effort to improve the original Medi-Cal system, the MIO system specifications were developed during the implementation and operation of the upgrade system.

Realizing the cost and processing efficiencies to be gained, and in response to the development of the MMS system underwritten by the State of California, the three fiscal intermediaries proposed to join together to form Medi-Cal Intermediary Operations. The system to be utilized by all three intermediaries, the EDSF MIO system, was approved by the State of California in August 1972 and implemented in November 1972. The MIO system included major improvements in the following areas:

- The ability to process all 14 Medi-Cal claim types and produce an integrated claims history data base.
- The expanded application of system cost containment features to include all services covered by the Medi-Cal program to provide better control.
- An expanded, regionalized prior to payment utilization review system based upon user input criteria.
- An added capacity to handle the ever increasing volume of Medi-Cal claims.

Since its implementation, the MIO system has been continually improved in response to MIO, State and federal requirements. With the implementation of the post payment surveillance and utilization review (SUR) subsystem, the EDSF MIO system was certified to meet or exceed the federal MMIS specifications for increased federal financial participation (FFP) in August 1975. As a result, California was the first of the ten largest states to qualify for increased federal sharing of data processing costs.

From September 1969 to present, EDSF has constantly improved the data processing services provided to the Medi-Cal program by both upgrading existing systems and installing new systems with increased capabilities. Significant financial and human resources have been invested by EDSF at substantial risk, while providing increased performance with no capital investment or assumption of risk by the State of California.

EVALUATION OF EDSF SYSTEMS

A state-commissioned study performed by Lockheed in 1968 and 1969 recommended a new claims processing approach including the incorporation of eligibility processing. One result of the study was the design and development of the MMS system incorporating design features recommended to achieve maximum system performance and program control. As the MMS development proceeded, MMS became the standard against which the EDSF MIO system was measured. With these two alternative approaches available, the State Assembly Committee on Efficiency and Cost Control commissioned a consulting firm to perform an in-depth review of the two systems. In February 1972 the Committee reported its results:

- MMS development and installation costs were expected to reach between \$12 and \$19 million.¹
- MMS annual operational costs were estimated to exceed those of MIO by approximately 17%, or \$7.3 million more per year.¹

A year later, in 1973, the Joint Legislative Audit Committee reviewed the two county pilot operation of MMS and found the system lacking in several areas:

- Inadequate accounting controls.³
- Duplicate payments were being issued.³
- Payments were being made to the wrong provider.³
- Payments were being made in excess of the proper amounts.³
- System controls were being suspended to speed payments to providers.³

In December 1972, House Resolution 129 was passed, which charged the MMS/MIO Blue Ribbon Panel, chaired by the Secretary of the Health and Welfare Agency, to investigate the effectiveness of the two alternative systems, MMS and EDSF-MIO. Several of the more important findings were:

¹ See Footnotes Page 8

³ See Footnotes Page 8

- EDSF MIO was judged superior on the basis of control over program benefit dollars expended.⁴
- EDSF MIO was judged superior based on significantly lower administrative costs and more effective provider payment explanations.⁴
- The cost of MMS would exceed EDSF MIO cost by \$25.3 million over the first 34 months of operation and \$10.4 million per year thereafter.⁴

The Blue Ribbon Panel did not recommend implementation of MMS on a statewide basis due to the superior performance of the EDSF MIO system, even though the State of California had already spent over \$12 million on MMS development.

The conclusive test of the EDSF MIO system occurred during the Medi-Cal procurement in 1973 and 1974. While two competitors responded with variations of the MMS system, once again the EDSF MIO system was judged equal or superior to the MMS alternative and significantly more cost effective. As a result of this competitive procurement, the MIO contract was continued. The State concluded "If a new contract were to be awarded, the MIO proposal would be the only viable option."⁵ A decision was made to shelve a system developed with between \$12 million and \$19 million of the taxpayers funds in favor of a system developed by the private sector at no expense to the State or assumption of risk by the State.

RECENT ACCOMPLISHMENTS

Since the RFP competition, the EDSF system has continued to grow in scope and efficiency. EDSF accomplished over 800 major system changes that were required by the department of Health or MIO since 1973. Numerous other improvements have been made by EDSF in an ongoing effort to upgrade the system to insure that it continues to be the most responsive and efficient claims processing system available. The recent refinements have been concentrated on increasing benefit dollar savings, while also increasing the level of service to both providers and

⁴ See Footnotes Page 8

⁵ See Footnotes Page 8

beneficiaries. Since 1973, benefit dollar savings have tripled, resulting in a cumulative savings exceeding \$1.5 billion dollars. This \$1.5 billion in reduced payments was identified and "cut-back" through the over 500 complex medical policy, pricing and validation audits that are the foundation of the EDSF MIO claims processing system.

The ability of the State of California to achieve the same impressive results through direct program administration was explored by the Department of Health in the summer of 1976.

The concept of using private industry to administer the Medi-Cal program was reviewed in the Department of Health report to the Joint Legislative Budget Committee.⁶ The report concluded that it was not a feasible time for the State to undertake direct administration of the Medi-Cal claims processing operation. A major influence in this finding was the extreme uncertainty surrounding future Medi-Cal/Medicaid programs.

Since 1969 EDSF has continually supplied superior EDP support to meet the rapidly changing demands of the Medi-Cal program on a guaranteed fixed price basis with no guaranteed contractual terms to project return on investment. EDSF systems have been constantly improved and upgraded to increase the efficiency of related clerical effort, lower total administrative costs, and maximize control over benefit dollar expenditures. EDSF has provided an excellent example of the flexibility inherent in the private sector which the report to the Joint Legislative Budget Committee identified as one of the most important future requirements for the Medi-Cal program. Graphic representations of the dramatic results achieved in the administration of the Medi-Cal program since EDSF has been providing EDP support are presented on the following pages.

6 See Footnotes Page 8

FOOTNOTES

- 1 Medi-Cal Fiscal Intermediaries and Procedures, Part III, A Technical and Fiscal Analysis of the Medi-Cal Management System and the Fiscal Intermediaries; February 14, 1972; Report of the Committee on Efficiency and Cost Control.
- 2 Analysis of the Budget Bill of the State of California; Fiscal Year 1971; Fiscal Year 1977; Report of the Legislative Analyst to the Joint Legislative Budget Committee.
- 3 Report on a Review of the Operations of the Medi-Cal Management System; April 2, 1973; Vincent Thomas, Chairman, Joint Legislative Audit Committee.
- 4 An Evaluation of Alternative Medi-Cal Claims Payment Systems; May 8, 1973; Control Analysis Corporation for the MMS/MIO Blue Ribbon Panel.
- 5 Evaluation of Proposals, Statewide Medi-Cal Intermediary; March 1974; Program Implementation Section, Health Financing System, Department of Health.
- 6 Report to the Joint Legislative Budget Committee Concerning State Operations of the Medi-Cal Fiscal Intermediary Functions; September 15, 1975; Department of Health.
- 7 Monthly Report on MIO Performance; Data for Calendar Years 1973 through 1976.

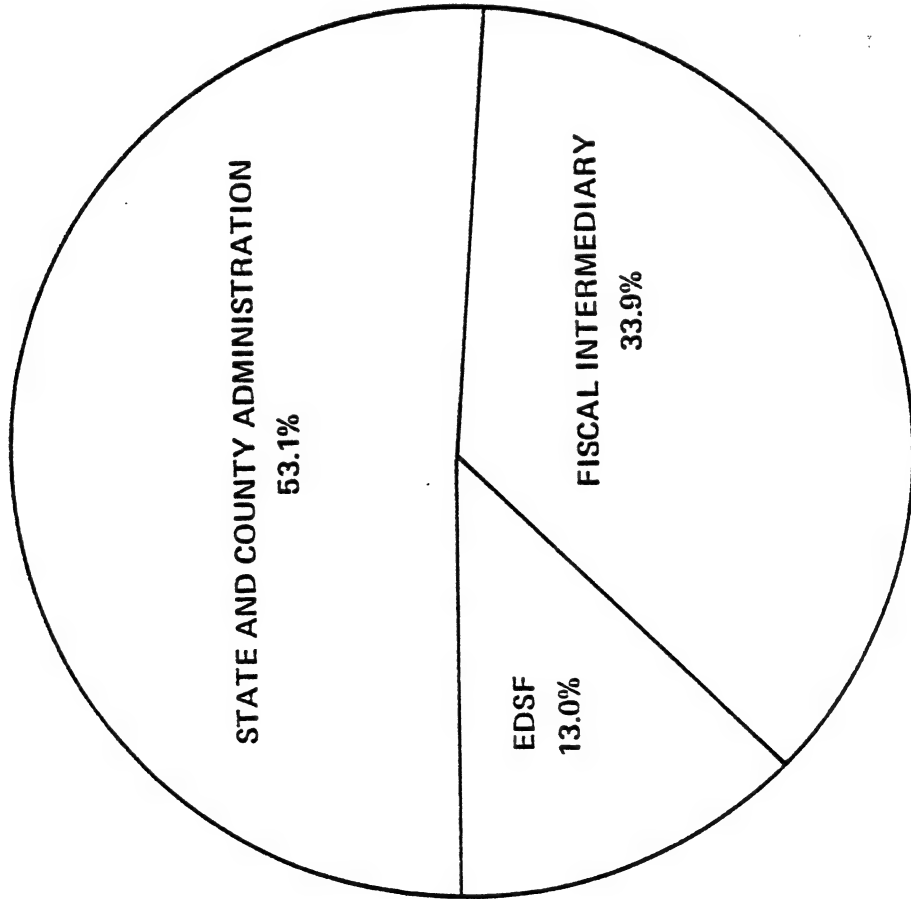
MEDI-CAL ADMINISTRATIVE COSTS COMPONENTS₂

A comparison of FY 1971 and 1976 administrative costs show a marked disparity in cost growth rates:

- Total administrative costs rose 182% from \$60 million to \$170 million.
- The combined EDSF and fiscal intermediary percentage of total costs have declined from 46.9% to 22.7%.

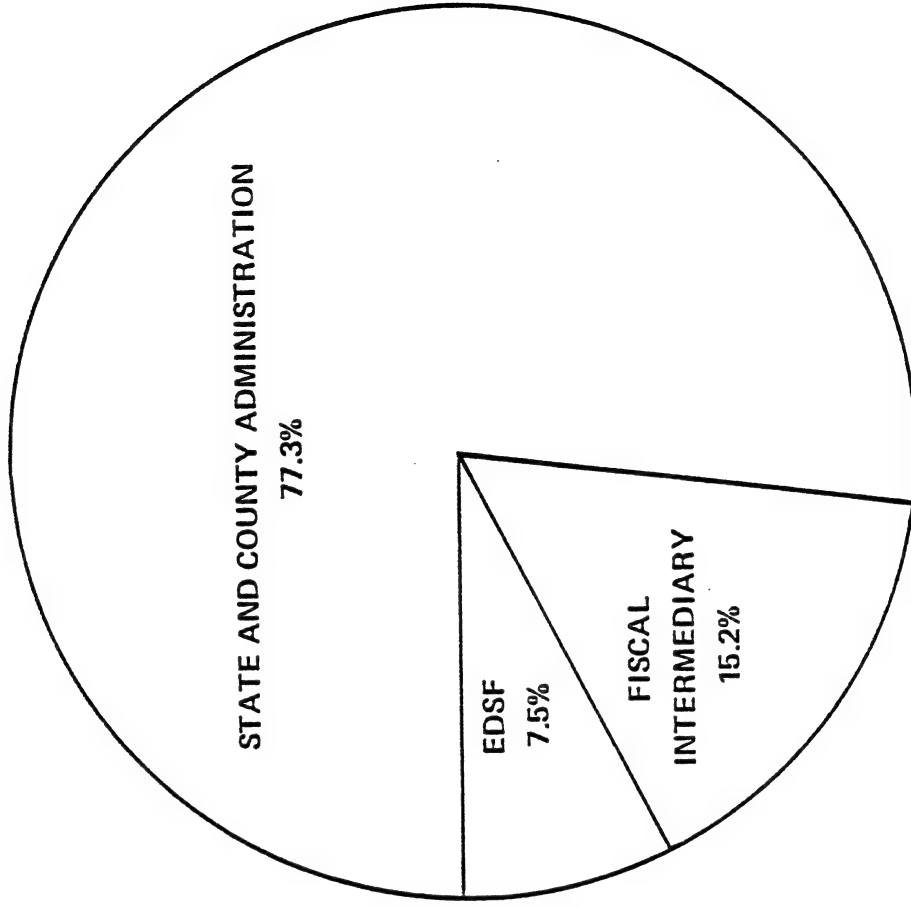
MEDI-CAL ADMINISTRATIVE COST COMPONENTS

FY 1971



\$60,000,000

FY 1976

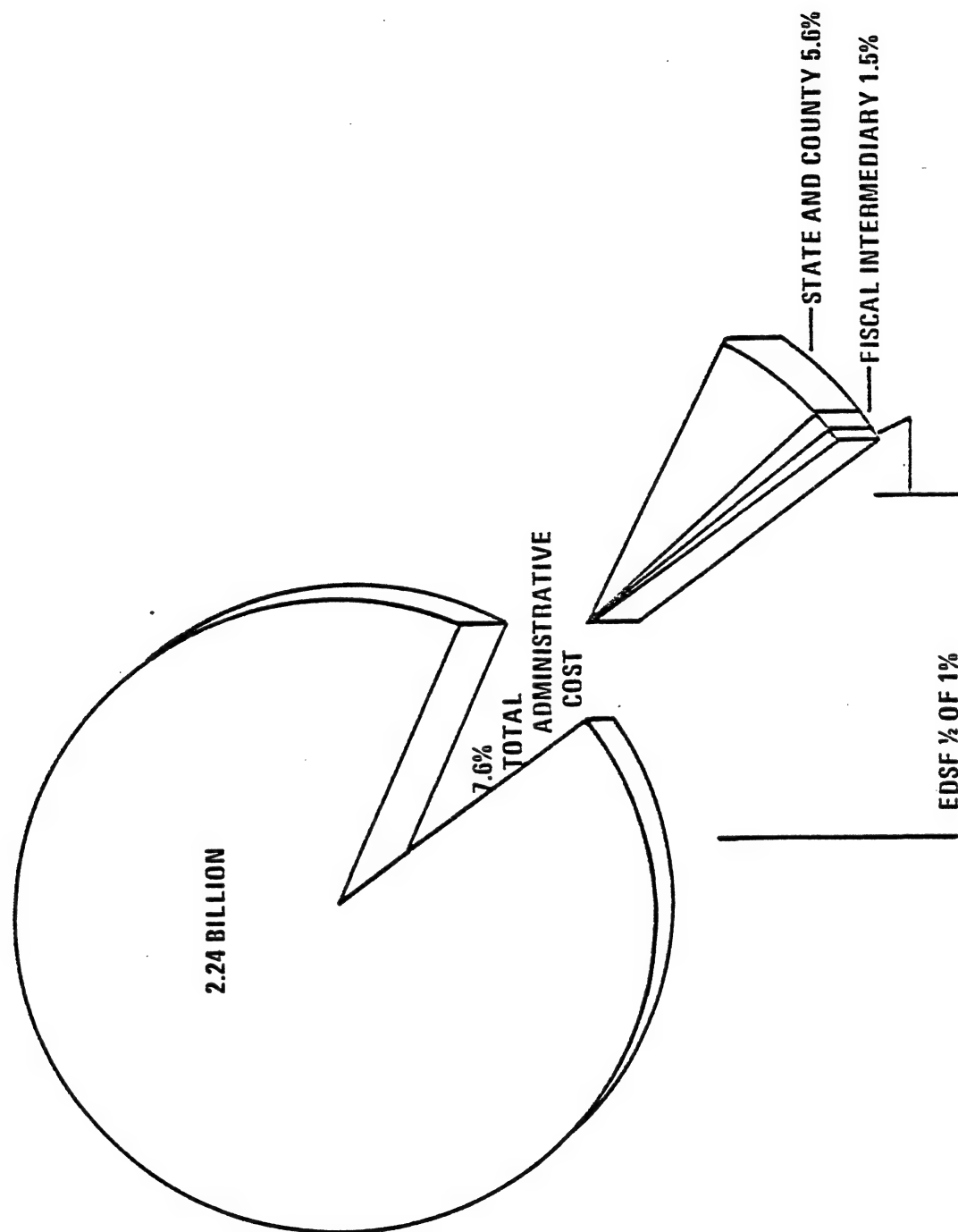


\$170,000,000

TOTAL MEDI-CAL PROGRAM COSTS FY 1976₂

During Fiscal Year 1976, a total of \$2.24 billion was spent for the Medi-Cal program. Costs to administer the program accounted for 7.6%. The EDSF charge was less than 1/2 of 1% of total program costs.

TOTAL MEDICAL PROGRAM COSTS FY 1976

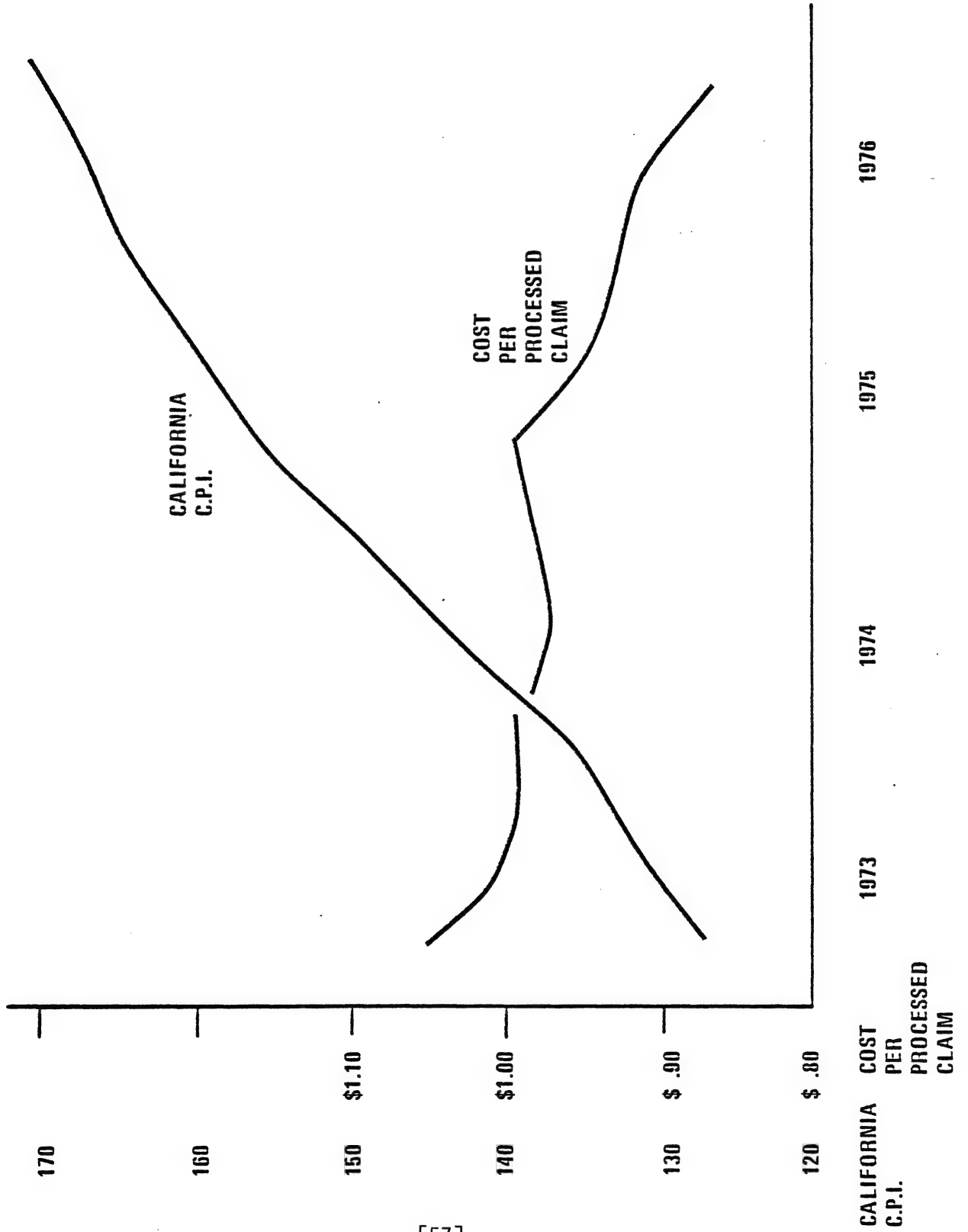


ADMINISTRATIVE COST CONTROL,

The administrative cost per claim, including fiscal intermediary and EDSF costs only, has dropped steadily as opposed to the Department of Labor Consumer Price Index for the San Francisco area.

- Cost per processed claim has declined 19% from \$1.05 to \$.84 due to increased productivity and efficiency, brought about by increased automation.
- This cost reduction occurred despite the inflationary affect of the Consumer Price Index rise from 127 to 170.

ADMINISTRATIVE COST CONTROL

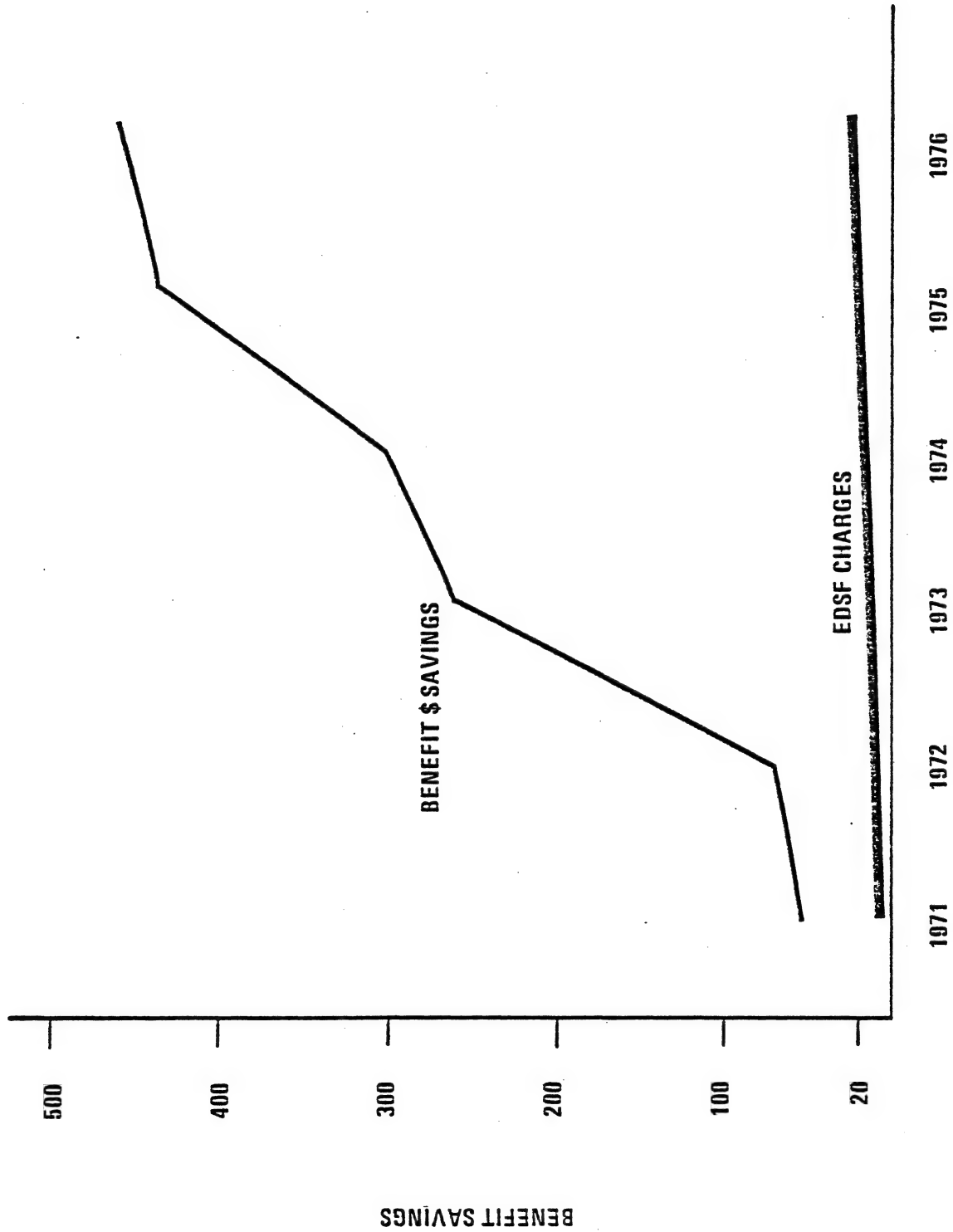


EDSF COST EFFECTIVENESS₇

EDSF charges are based upon a fixed cost per processed billing unit.

The EDSF system's true cost effectiveness is highlighted in the comparison of the benefit dollars saved by the system to the EDSF charges.

EDSF COST EFFECTIVENESS

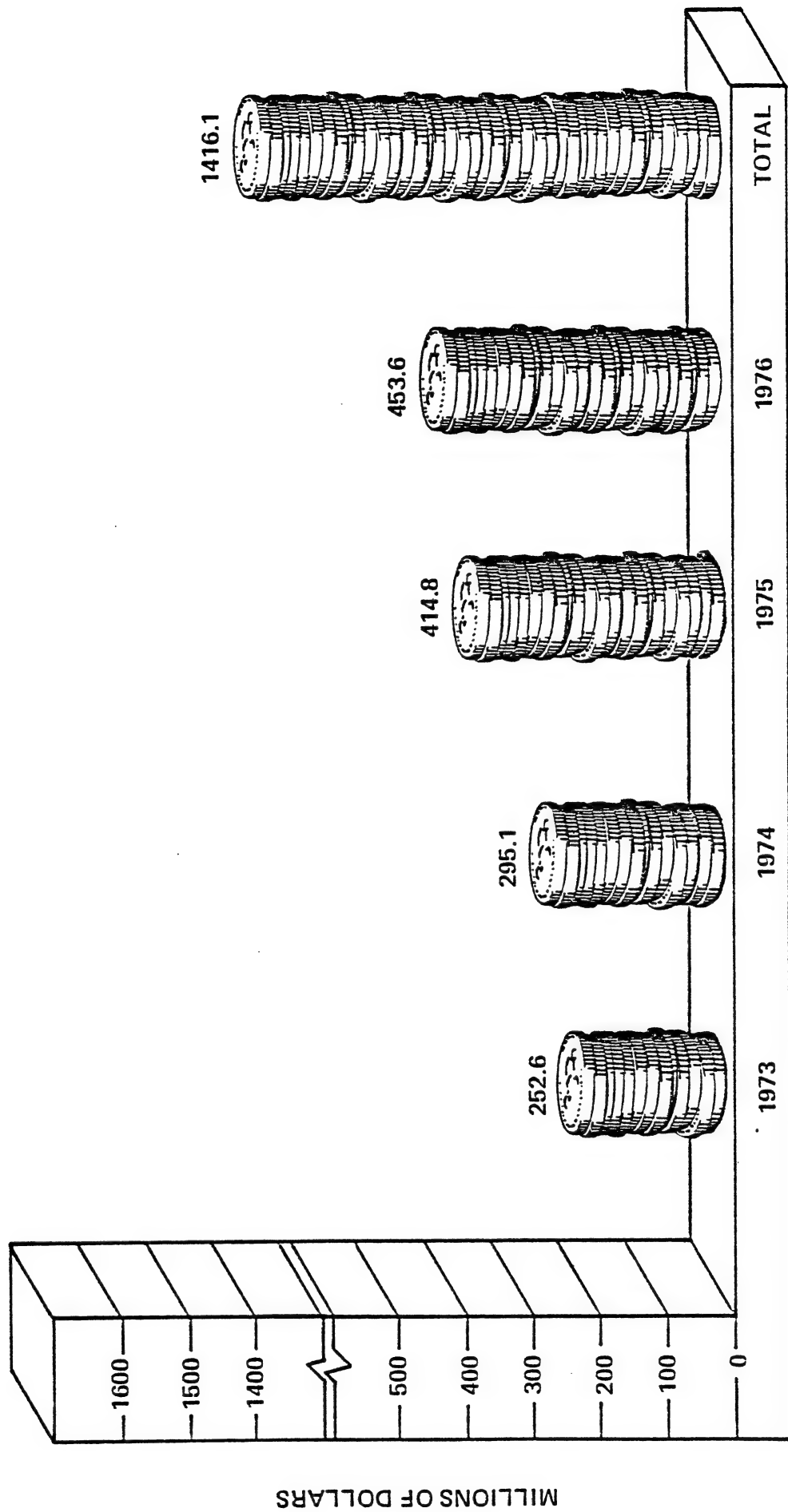


BENEFIT DOLLARS SAVED,

Substantial benefit dollar savings to the Medi-Cal program were achieved from utilization of the EDSF MIO system:

- **Over \$1.5 billion in benefit dollar savings has accrued to the State of California.**
- **Savings continue to increase with almost 30% of the total savings, \$453 million, identified in 1976 alone.**

BENEFIT DOLLARS SAVED



DEPARTMENT OF HEALTH

714 P STREET
SACRAMENTO, CALIFORNIA 95814
(916) 445-2927



January 17, 1977


Mr. John Williams
Auditor General
925 L Street, Suite 750
Sacramento, CA 95814

Dear Mr. Williams:

Dr. Lackner has asked me to respond to your request for comments on the drafts of the System Modification and Processed Billing Units (PBU) sections ^{1/} of the joint audit of Electronic Data System Federal. It is my understanding that these are drafts of the Arthur Andersen report which will be included in your final report. My staff has reviewed the drafts and our comments are enclosed in this letter.

Thank you for the opportunity to comment on the drafts. We will be looking forward to reviewing other sections as they are completed.

Sincerely,


Albert C. Brown
Chief Deputy Director

Enclosure

^{1/} These comments refer to page 14, Payments for Data Processing Services, and page 15, System Modifications, of this report.

Comments on Auditor General Drafts of Report Section Entitled
"Audit of the Method of Determining Medi-Cal Processed Billing Units"
and "Audit of Medi-Cal System Modifications"

The two draft reports were reviewed by appropriate DOH staff. Comments are presented both on an overall basis and on each individual report.

Overall Comment

The relationships between the Department of Health, MIO, and EDSF should be more clearly described and maintained throughout both reports.

Comments on "Audit of the Method of Determining Medi-Cal Processed Billing Units"

* * * 1/

Comments on "Audit of Medi-Cal System Modifications"

Page 6 line 8 2/ "(EDS quotes a maximum charge and bills less if less effort is required.)"

Comment - What happens if charges are above the estimate? The payment procedure which is followed to reimburse EDSF for changes should be described in this section.

* * * 1/

Page 8 Exhibit I, Provider Participation Report \$22,925

Comment - This report was provided at the request of the Auditor General. The Auditor General reported that MIO/EDS produced this report at no cost. If this is the case the Department will initiate efforts to collect the \$22,925 paid to MIO/EDS.

1/ Comments deleted refer to items shown in draft report but not included in this report.

2/ Page references are to the draft report.

* * * 1/

Page 15 line 20 "By default, the priority determined process falls to EDS."

Comment - Since EDS is a subcontractor to MIO, the State does not deal directly with EDS. Therefore, MIO should take the initiative in instructing EDS on the priorities of system modifications which have been approved by the State.

* * * 1/

Page 19 line 22 "The State should assign people with a systems background to be on-site at MIO facilities on a full-time basis. Their initial objective should be to become familiar with the details of EDS's system. Initially, they would document substantial portions of the system. Subsequently, they would serve as a liaison between the State, MIO, and EDS to facilitate the implementation of directives to monitor claims processing performance and to provide input into a priority evaluation process."

Comment - It would be more realistic to obtain the EDS documentation for review and testing. This would enable the State to be familiar with the system without duplicating existing documentation.

Memorandum

To : John Williams
Auditor General
925 L Street, Suite 750
Sacramento, CA 95814

Date : January 21, 1977

Subject: "Department of Health
Has Failed to Establish a
System to Monitor the
Medi-Cal Subcontract"
Comments

From : Office of the Director

Dr. Lackner has asked me to respond to the report chapter entitled "Department of Health Has Failed to Establish a System to Monitor the Medi-Cal Subcontract". Our comments follow.

The report should indicate that the Department of Health monitors the claims processing system including all Medi-Cal Intermediary Operations costs and Electronic Data Processing Federal (EDSF) revenue. The only area not included in post audits is EDSF costs. These costs were neglected due to lack of audit rights.

The statement that the current audit was the result of legislative hearings is not entirely accurate. The executive branch had previously initiated action to determine the legal basis we enjoyed to gain access to EDSF cost data for audit purposes. In essence, two audit efforts were initiated and subsequently combined to form the current joint audit.

Subsequent to the auditor's request for approval documentation of the EDSF subcontract, the attached approval letter was discovered. Therefore, approval of the original EDSF contract has now been established.

The conclusion could be more clearly stated as follows: "The State's failure to monitor the data processing cost of the Medi-Cal claims processing contract was due to its failure to require that the subcontract contain an audit access clause." Substitution of State for Department of Health recognizes that both the Department of Health and the Department of Benefit Payments have had audit responsibilities. Also, it is clarified that the State has been auditing all administrative expense except EDSF costs.

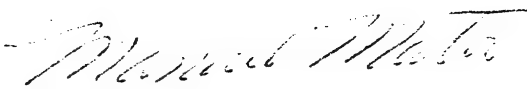
The recommendation to monitor the present subcontract through periodic audits should be directed to the Department of Benefit Payments. This Department currently performs administrative expense audits of the fiscal intermediary operations.

John Williams

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January 21, 1977

This concludes our comments on your draft report. If I can be of further assistance, please contact me.

for 
Albert C. Brown
Chief Deputy Director
5-2927

Attachment

cc: Greg Thompson
Medi-Cal Procurement Project
Department of Health
1507 - 21st Street, Suite 330



DEPARTMENT OF HEALTH CARE SERVICES
714 P STREET
SACRAMENTO, CALIFORNIA 95814

July 9, 1970

Mr. Thomas C. Paton, President
California Physicians Service
720 California Street
San Francisco, California 94108

Dear Mr. Paton:

On June 17, 1970, I wrote you setting forth several specific reasons why this Department could not approve the proposed subcontract between California Blue Shield and EDSF for the performance of data processing services in connection with the Medi-Cal program.

On June 18, 1970, Deputy Director Richard L. Camilli and Department attorney Harry K. Grafe met with Blue Shield Vice President William Terminello, Blue Shield attorney David E. Willett, EDS Vice President Morton Myerson, and EDS attorney Robert Martin in San Francisco and discussed the provisions in the subcontract which the Department had determined as making the agreement unacceptable.

I am pleased to report that, as a result, an amendment was prepared to the "Basic Ordering Agreement, Medi-Cal and Systems Conversion Task Orders" in which 10 revisions were made. That amendment, which has been subscribed on behalf of Blue Shield and EDS, was forwarded to the Department by Mr. Terminello on June 19. The Department has reviewed the subcontract and the amendment, and finds that with the provisions contained in the amendment, the subcontract as so amended meets with the approval of this Department.

Mr. Terminello's letter of June 19 satisfactorily resolves the problem we had regarding paragraph 24 of the Basic Agreement. The only other area which needs be mentioned concerns paragraph 27 of the Basic Agreement, which speaks to the confidentiality of certain provisions of the subcontract. So there will be no misunderstanding, I will reiterate the statements made by Mr. Camilli and Mr. Grafe at the June 18 meeting, viz, that pursuant to Government Code Section 6250 et seq., the subcontract and amendment, now approved, become a "public record" available to be inspected and copied by the public, and that the Department cannot afford either the publicity or the cost of defending a legal action the purpose of which would be to protect private business interests rather than the interest of the State.

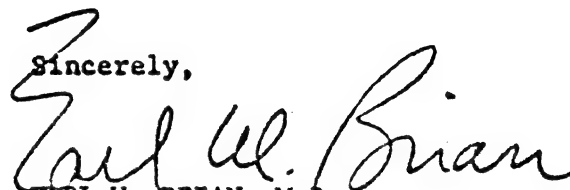
Mr. Thomas C. Paton

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July 9, 1970

I am gratified that the matter of this subcontract has finally been resolved to everyone's satisfaction, and the Department looks forward to continued improvement in data processing functions relating to Medi-Cal claims processing under this subcontract.

Sincerely,


EARL W. BRIAN, M.D.
Director

ARTHUR ANDERSEN & Co.

SPEAR STREET TOWER, SUITE 3500
ONE MARKET PLAZA
SAN FRANCISCO, CALIFORNIA 94105
(415) 546-8200

January 6, 1977

The Honorable John Williams
Auditor General
State of California
925 L Street
Sacramento, California 95814

Dear Sir:

As specified in Resolution 43 of the Joint Legislative Audit Committee, adopted May 5, 1976, and in response to Request for Proposal No. 286 issued by your office in June 1976, we proposed to assist your office and the Health and Welfare Agency of the State of California in a joint review of the Medi-Cal Fiscal Intermediary Operations, including the services of Electronic Data Systems Corporation ("EDS Corporation"). The contractual agreement covering our work and participation incorporated by reference the aforementioned request for proposal, as well as our proposal dated June 29, 1976. The agreement was subsequently expanded by directives of your office.

The engagement involved personnel from both the San Francisco and Dallas/Fort Worth offices. The work was under the overall direction of Donald Wurtz, Partner, San Francisco. We have completed the work and are pleased to submit this report.

Our report consists of three major sections dealing with the EDS Federal (a subsidiary of EDS Corporation) Study, Audit of the Processed Billing Units (PBU), and a review of the Systems Modification made by EDS of their systems utilized in processing data for the Medi-Cal Fiscal Intermediary. The scope of the project, together with descriptions and explanations of our findings are set forth in the following sections of this report. The work undertaken and the scope adopted were authorized, directed, and cleared at appropriate time intervals with a representative of the office of the Auditor General and of the

ARTHUR ANDERSEN & Co.

The Honorable John Williams

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January 6, 1977

Department of Benefit Payments. Program report meetings were held to review the progress of the work, define and modify the scope of the work, and to expand the scope as considered necessary by the Auditor General and/or the Department of Benefit Payments. Such progress report meetings were held on:

August 24 & 25, 1976 - Dallas
October 8 & 9, 1976 - San Francisco
November 23 & 24, 1976 - Dallas
December 16, 1976 - San Francisco
December 20 & 21, 1976 - Dallas
January 6, 1977 - San Francisco

As appropriate and necessary, representatives of EDS Corporation, as well as its subsidiary corporations and operating levels, furnished data, explanations and descriptions of their procedures and policies in providing services to the Medi-Cal Fiscal Intermediary Operations. Such data, as is included in our report, together with underlying supporting information, has been thoroughly reviewed with representatives of EDS Corporation.

The following report is complete within itself. As contractually required, our work papers have been furnished to the Auditor General for his confidential information and security. However, in our opinion, it is not necessary to refer to the working papers to determine the scope and the accomplishment of the work done or to appropriately report the results thereof.

Our work was programmed to obtain pertinent data regarding the Medi-Cal Fiscal Intermediary Operations through completion of a work program approved by the Auditor General and the Department of Benefit Payments. Certain of the work steps are highlighted in the report. Pertinent data obtained is summarized, and where appropriate, our comments and/or suggestions are made in the report. As directed by the Auditor General and the Department of Benefit Payments, the purpose of our work was not to perform an audit of financial statements; rather to conduct a special study of EDS internal costing procedures related to the Medi-Cal Project. This study included appropriate tests of underlying cost data and related internal costing procedures to the Medi-Cal Project. Accordingly, we do not express an opinion on the overall financial position nor results of operations of EDS Corporation or any of its subsidiaries, projects, or contracts as of a date or for a period of time.

ARTHUR ANDERSEN & Co.

The Honorable John Williams

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January 6, 1977

We will be pleased to discuss the report and to answer questions of authorized representatives of the office of the Auditor General or of the Department of Benefit Payments of the Health and Welfare Agency.

Very truly yours,

Arthur Andersen & Co.

PBU PAYMENT SCHEDULEa. SCHEDULE FOR NON-INSTITUTIONAL PBU'S

<u>Monthly Number of PBU's</u>	<u>Monthly Operating Charge</u>
0 to 2,000,000	\$592,800; or
2,000,001 to 2,500,000	\$592,800 plus \$.27 per PBU from 2,000,001 to and including 2,500,000 PBU's; or
<u>Monthly Number of PBU's</u>	<u>Monthly Operating Charge</u>
2,500,001 to 3,000,000	\$727,800 plus \$.25 per PBU from 2,500,001 to and including 3,000,000 PBU's; or
3,000,001 to 3,500,000	\$852,800 plus \$.23 per PBU from 3,000,001 to and including 3,500,000 PBU's; or
3,500,001 to 4,000,000	\$967,800 plus \$.21 per PBU from 3,500,001 to and including 4,000,000 PBU's; or
4,000,001 - up	\$1,072,800 plus \$.20 per PBU over 4,000,000 PBU's.

The price for processed non-institutional claims (PBU's) will include data preparation and electronic data processing.

b. SCHEDULE FOR INSTITUTIONAL PBU'S

<u>Monthly Number of PBU's</u>	<u>Monthly Operating Charge</u>
0 to 300,000	\$100,000; or
300,001 to 350,000	\$100,000 plus \$.30 per PBU from 300,001 to and including 350,000 PBU's; or
350,001 to 400,000	\$115,000 plus \$.29 per PBU from 350,001 to and including 400,000 PBU's; or

400,001 to 450,000	\$129,500 plus \$.28 per PBU from 400,001 to and including 450,000 PBU's; or
450,001 to 500,000	\$143,500 plus \$.27 per PBU from 450,001 to and including 500,000 PBU's; or
500,001 - up	\$157,000 plus \$.26 per PBU over 500,000 PBU's.

The price for processed institutional PBU's is for electronic data processing only, and does not include data preparation.

EDSF RATIONALE FOR
DATA CENTER COST ALLOCATION

EDS internally allocates the costs of data center operations among all users of any data center. The basis of the cost allocation is SMF statistics. The SMF system was designed to provide precise records of all resource utilization. However, there are certain data center costs that SMF statistics do not address. EDS has chosen to further allocate data center costs based upon claim input volume; since in claim oriented, volume intensive health care systems, input volume directly affects data center resources required, and provides a basis for cost allocation for two areas not addressed by SMF statistics; data center excess capacity requirements and operational scheduling constraints.

To illustrate the impact of the MIO system upon data center operations, the following simplified daily schedule and resource requirements (not including thrice monthly checkwrite or month end processing) are provided:

<u>Subsystem</u>	<u>Core</u>	<u>Tape Drives</u>	<u>Operational Window</u>	<u>Normal Completion</u>
Front End (HMAJ)	710K	14	8:00p - 2:00a	12:00a - 2:00a
Medical Policy (HMBJ) (3 times weekly)	700K	12	2:00a - 4:00p	1:00p - 4:00p
Control and Reporting (HMCJ)	250K	10	2:00a - 5:30a	4:00a - 5:30a
On Line Loads (HMEJ)	300K	5	2:00a - 7:00a	5:00a - 6:30a

The MIO system runs on a tight 24 hour cycle. From 7:30 a.m. to 4:30 p.m. Online file inquiry, data correction input, and four phase new claim input transactions are processed. From 4:30 p.m. until 8:00 p.m. online splitter, input conversion and sort programs prepare input for front end processing. Upon completion of the front end, approximately 2:00 a.m., all three remaining subsystems in the daily cycle must begin concurrently to meet established schedules. Control and reporting must finish by 5:30 a.m. to allow distribution of reports and worksheets to Blue Cross South in Los Angeles that morning.

The online loads must be completed by 7:00 a.m. to support the next day's online inquiries beginning at 7:30 a.m. Medical policy must be completed by 4:00 p.m. the following day since input must be provided to the next front end cycle.

Input claim volume averages 160,000 daily, yet fluctuates from 100,000 to as high as 240,000 due to claim receipt patterns and clerical over-time in claims input sections. To relate MIO claim volume to other accounts utilizing the San Francisco Data Center, MIO has four times the claim input volume of the next largest account.

Any data center must have capacity in excess of peak requirements resulting in some idle capacity at any given time. In the case of MIO, significant excess capacity is required to insure that tight operational schedules can be met. Since MIO cycles cannot be run concurrently, excess resource is required to be able to rerun any cycle that was unsuccessful due to hardware or software failure. The high volume, long-running characteristics of MIO put this job on the critical path of ongoing data center operations. Without this excess capacity, a rerun backlog would have a snowball effect from which it would be extremely difficult to recover.

However, when this excess capacity is not being used by either MIO or other jobs, its expense is attributed to overhead. Since the expense would not exist except to support peak use requirements, it would not be equitable to divide the expense based strictly on SMF utilization. Division of the cost based on input volume apportions costs to the jobs that require this excess capacity.

Operational scheduling considerations also underscore the necessity for a claims input volume adjustment. Non-productive, idle time is required for the system to collect the resources necessary to start any large job. During this "dry-up" idle time, significant resources must sit idle, and non-billable, while freeing up the core, tape and disk drives necessary to initiate the MIO job stream. From the MIO system schedule described earlier, significant resource (1250K core and 27 tape drives) need to be available upon completion of front end processing. This idle time multiplied by the amount of resources being accumulated is not allocated to any job through the SMF system. This cost goes into overhead of the data center to be divided among all users. Smaller systems contribute little to this between jobs cost since they require little "dry-up" prior to operation. Allocation of idle resource costs based on volume results in the fairest distribution of these costs.

Another significant operational consideration caused by high volume, long-running jobs is the occasional necessity for production reruns. When an MIO rerun is required, other jobs are often cancelled due to the time constraints caused by MIO's sequential cycle requirements. The costs resulting from the cancelled jobs go into the SMF time charged to the cancelled job even though that time is "lost". Only large users ever have the requirement to force job cancellation; and, therefore, an adjustment based upon volume takes this factor into consideration.

Allocating costs based on volumes, in addition to SMF utilization, is a standard business practice of all large-scale computer centers. Additional charges for high volume, long-running jobs may take the form of cost penalties for use of "excessive" data center resources.

The following resource limitations prior to invoking penalties were quoted by other companies in the San Francisco area:

<u>Company</u>	<u>Core Size</u>	<u>Tape Drives</u>	<u>Disk</u>	<u>CPU</u>
Lockheed Missile and Space Company (370 - 165)	160K	8	6 2314 Type Packs	540 Seconds/ Hours
Fireman's Fund American (370 - 165)	200K	6	6 Disk Data Sets	Included in Algorithm

- (1) The attached documentation provides the billing algorithms used by both firms. The MIO system, running a daily cycle, with high volume input, large and numerous files, and large core requirements would be penalized severely utilizing either firm's algorithm.

In summary, EDS has found that a fair allocation of data center costs can be based on two factors: SMF utilization data and input claim volume. SMF utilization data is universally accepted as the basis for cost allocations. However, since SMF does not accurately depict all data center cost considerations, some additional factors must be considered. Our industry experience has proven to us that claim input volume provides the missing factor for complete and equitable cost allocation. The volume factor assures that indirect costs, such as excess capacity for peak use requirements, "dry-up" idle time, and forced reruns affecting other jobs are attributed to the user responsible for their generation.

The requirement to properly allocate these types of costs is recognized and satisfied industry-wide in a variety of ways. EDS feels that its unique solution to this problem results in a fair total cost allocation with minimal impact on efficient and cost-effective operations.

Note (1) The attached documentation has not been included in this Appendix. It is available from the Auditor General's Office.

Office of the Auditor General

cc: Members of the Legislature
Office of the Governor
Office of the Lieutenant Governor
Secretary of State
State Controller
State Treasurer
Legislative Analyst
Director of Finance
Assembly Office of Research
Senate Office of Research
Assembly Majority/Minority Consultants
Senate Majority/Minority Consultants
California State Department Heads
Capitol Press Corps